FOUNDED IN 1856

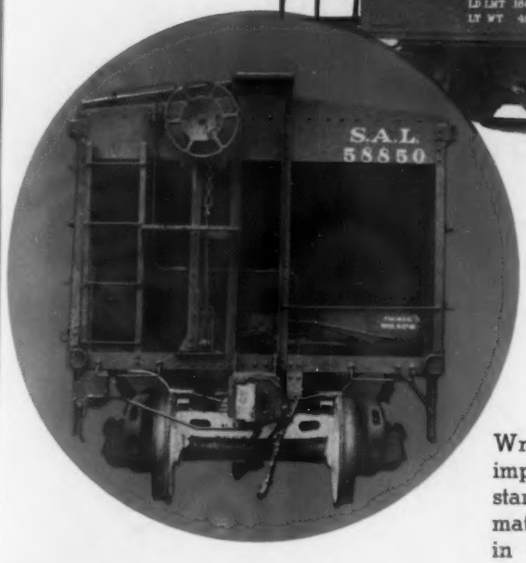
RAILWAY AGE

THE STANDARD RAILROAD WEEKLY FOR ALMOST A CENTURY

APRIL 30, 1951

42147

5 Copy



On 600 More Seaboard Hopper Cars . . .

BYERS WROUGHT IRON BRAKE PIPE SAFEGUARDS SERVICE

WHEN the Seaboard Air Line Railroad Company recently ordered 600 more phosphate hopper cars, the Engineering Department took decisive steps to cut maintenance and extend life in the braking system. All air brake piping is Byers Wrought Iron. These cars, designed to haul phosphate rock out of the Seaboard's Florida territory to boat docks and to midwest areas, were built by Pullman-Standard. A view of the "AB" brake installation on one of the hopper cars is shown above.

Most of the country's leading roads follow this same sound practice, to safeguard the air brake service on rolling stock. First hand experience has convinced them of the greater durability and the greater overall economy of genuine wrought iron. Byers Wrought Iron pipe provides an extremely important service quality in its ability to stand vibration and shock without premature fatigue failure. It also works well in the shop. Absence of "spring back" makes it easy to bend, simplifies fitting, and eliminates stored strains that are destructive to pipe life and connected equipment. On coal and refrigerator cars, where the pipe may be exposed to corrosive drippings, the corrosion resistance of genuine wrought iron helps to extend the useful service period.

If you would like a brief, interesting story of just how genuine wrought iron is made, why it offers so many unusual service qualities, and where it is used, ask for our booklet, THE ABC'S OF WROUGHT IRON. We'll be glad to send you a copy.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. Export Division: New York, N.Y.

WHY GENUINE WROUGHT IRON LASTS

This notch-fracture test specimen illustrates the unusual fibrous structure of genuine wrought iron—which is responsible for the unusual corrosion and fatigue resistance of the material. Tiny threads of glass-like silicate slag, distributed through the body of high-purity iron, give a structure like that of stranded cable, halt and disperse corrosive attack, and discourage pitting and penetration. They also anchor the initial protective scale, which shields the underlying metal.

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

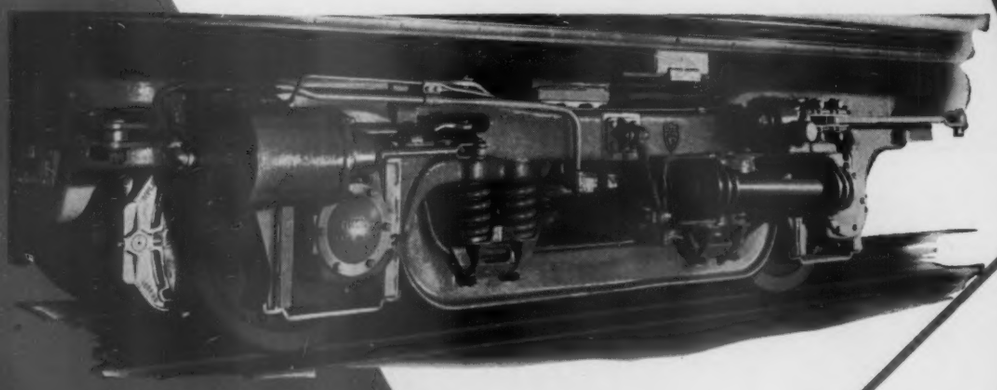
WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

BURLINGTON'S

New Gallery-Type Suburban Cars Have



Commonwealth 4-wheel truck for suburban cars.

COMMONWEALTH TRUCKS

In a new approach to streamlined commuter service in the Chicago area, the BURLINGTON, as part of their commuter service betterment program, has recently placed in service thirty new 85-foot gallery-type suburban cars which seat from 145 to 148 passengers.

Smooth, easy riding of these cars is assured by COMMONWEALTH all-coil spring 4-wheel trucks equipped with bolster anchors to cushion shocks, and bolster roll stabilizers to control car body roll. The COMMONWEALTH one-piece Cast Steel Truck Frames and Bolsters assure maximum strength with light weight and unusually long service life with a minimum of upkeep cost.

Specify COMMONWEALTH Trucks for your passenger equipment.

GENERAL STEEL CASTINGS

Granite City, Illinois — Eddystone, Pennsylvania

MINER

Modern Road Locomotives

share one important thing between them . . . the 24-RL

There is one vital piece of equipment that all modern road locomotives have in common—Westinghouse 24-RL Brake Equipment. Combining of various interchangeable sections provides a wide combination of functions, which completely meet the needs of all normal assignments.

The flexibility of the 24-RL is particularly helpful in cases where assignments have not been completely defined when locomotive construction starts. Selected sections can be inserted at any time. Substitutions may be made after locomotives are in service, with no change in basic piping, if changes in assignment make this desirable.

Several typical combinations, which suggest the broad possibilities of the 24-RL, are illustrated and described in Catalog No. 2058. A copy will be sent on request.

Westinghouse Air Brake Co.

WILMERDING, PA.

Vol. 130, No. 17 April 30, 1951

RAILWAY AGE

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Marine Engineering & Shipping Review Marine Catalog & Buyers' Directory
Books covering transportation and building

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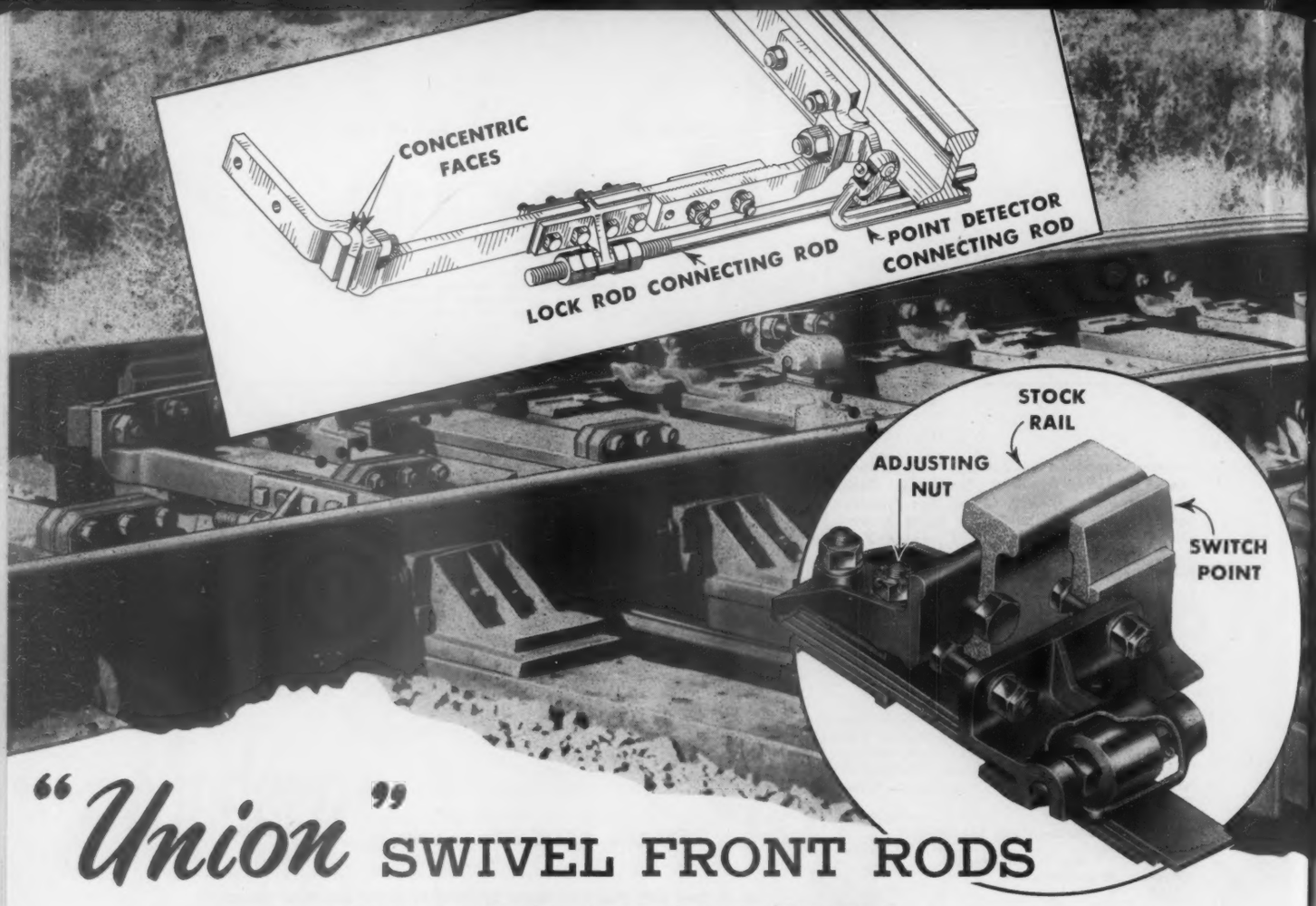


"Union" SWIVEL FRONT RODS and ROLLER BEARINGS

IMPROVE SWITCH OPERATION

"Union" Style U Swivel Front Rods provide an exceptionally strong connection between switch points . . . hold points vertical, yet permit the freedom of motion necessary to limit excessive strain. The T-bolt connection with large contact areas effectively minimizes wear, and lost motion is prevented by the action of the spring lock washers.

"Union" Swivel Front Rods are applicable to spring, hand-thrown or power-operated switches... slip switches or movable point frogs.

"Union" Style R Roller Bearings reduce the power required to throw a switch . . . save wear on connections and operating mechanism . . . lessen maintenance time required for cleaning and oiling switches. Applicable to hand-thrown, mechanical, power or spring switches . . . "Union" Roller Bearings are easy to install and simple to adjust, as they are independent of the switch rods and operating mechanism . . . do not interfere with tie tamping, and require little attention except for occasional lubrication.

UNION SWITCH & SIGNAL COMPANY

WEEK AT A GLANCE

MORE MONEY FOR "NON-OPS": As reported in our leading news article, non-operating employees will receive "escalator" wage increases totaling about $130 million a year, as a result of approval by Eric Johnston, Economic Stabilization Agency administrator, of a "ceiling-piercing" increase of six cents per hour.

NEWS ROUND-UP: March gross estimated to be 15.8 per cent above March 1950.—*Railway Age*, for third consecutive year, wins National Safety Council public interest award.—C. & O. orders 107 diesels, to dieselize 100 per cent of Pere Marquette district and 80, 60, and 11 per cent, respectively, of Chesapeake district passenger, switching and freight service.—Other diesel orders total 85 units, including 34 for Wabash and 23 for Burlington.—N. Y. C. to rebuild Harlem River bridge.—Union Pacific to buy 50 passenger-train cars, 22 diesels.—Net car shortage drops to 5,109, as loadings increase to 809,520.—I.C.C. order requires heavy loading of lumber.—David C. Bevan succeeds George H. Pabst, Jr., as P.R.R. vice-president, finance.—"Star Routes" to replace rail-operated mail trucks.—Gass reports gain in freight car ownership.—Canadian roads ask rate increase of 14 or 15 per cent.—I.C.C. finds "excessive speed" caused Woodbridge wreck.—A.R.D.A. meets at St. Louis.—Boston & Albany completely dieselized.—Improvement in western car supply permits scheduling of cancellation of orders for "fleet movement" of cars to Western lines.

THE REAL RESPONSIBILITY: "When, for a period of almost a decade, a situation as bad as that in railway labor relations exists—arising from 'loopholes' which have been found and utilized in legislation designed to protect the public interest in the conduct of such relations—the conclusion is inescapable that the responsibility for plugging up those loopholes rests squarely upon Congress." That statement—the concluding paragraph of this issue's leading editorial (page 19)—is the result of an analysis of the responsibility for recurrent strikes in the railroad industry.

BETTER RIDE, LONGER WEAR: How new four-motor drives which put all the weight of a car on driving axles give the cars better riding qualities and longer potential life is told, beginning on page 22, by three General Electric men—R. A. Williamson, F. C. Kreitler and W. S. O'Kelly. The new type of equipment has been applied to 50 Pennsylvania m.-u. cars.

CONSIDER THE "EXEMPT" TRUCKER! Consider him well, a thorn in the flesh of railroads and of established certificated truckers alike; who comes and goes when and where he pleases; hauls whatever he likes for whoever will "lease" his truck; obeys no laws save those of his own choosing; pays virtually no taxes. In all American transportation there is today no more disturbing factor, no more unsettling element, than "exempt" truckers—"exempt," by virtue of the fact that their nominal business is transportation of "unprocessed" agricultural commodities and fish, from all regulation except safety rules—which they more often honor in the breach than in the observance. Common sense, and fairness to established transportation systems of all types, would seem to dictate a determined effort to *reduce* the number of these itinerant "exempt" truckmen. Yet by *broadening*, rather than *narrowing*, the fields within which they may operate, the I.C.C. has opened the way to an *increase* in their number and in the scope of their operations. This amazing decision—which can hardly help but confound the confusion already existing—is reported in the news section.

ONE TRACK—40 TRAINS: On page 28 is a description of the New York Central's installation of centralized traffic control on 39 miles of single-track main line between Mattoon, Ill., and Pana—a segment which handles approximately 40 trains a day. The change-over to C.T.C. involved replacement of six locally controlled mechanical interlockings by power switches controlled and signaled from the dispatcher's office.

BETTER THAN EXPECTED: When the Gulf, Mobile & Ohio became the country's largest fully dieselized railroad, as of late 1949, it naturally had available facts and figures which indicated that the change-over from steam power would produce satisfactory results. Those results, generally, appear to have exceeded the expectations of G. M. & O. officers. The article, beginning on page 25, on which that statement is based, gives comparative figures for the road's last full year of principally steam operation and its first full year of all-diesel operation.

MORE ABOUT SERVICE WRACK: Starting on page 33 is Part II of A. H. Candee's discussion—Part I of which appeared in last week's *Railway Age*—of service wrack of electrical machinery in diesel locomotives. This second, and final, installment deals with electrical stresses, not perceptible to human senses, but capable of causing definite deterioration of locomotive equipment.

ONE MACHINE—MANY JOBS: On pages 30-32, Noah Garner, auditor freight accounts of the Southern, tells how his company uses the National Cash Register Company's versatile Class 31 typewriter-accounting machine for many different types of freight accounting work.

BETTER HOUSEKEEPING AT LOWER COST: The Chicago & North Western is achieving both of those results simultaneously at its Chicago passenger terminal by use of a Tennant power sweeper to replace a pushbroom crew. (Page 36)

Lucky

Lucky . . . that the PS-1,
famous Pullman-Standard "first"
in box-car standardization,
was 'way past the blueprint stage
and rolling in assembly-line production,
long before the present defense emergency
was even dreamed of!
Lucky for America, that the railroads,
at this critical time,
are able to get such
good box cars . . . faster!

PS-1 *A quality box car efficiently produced*

PS-1 MILESTONE . . .

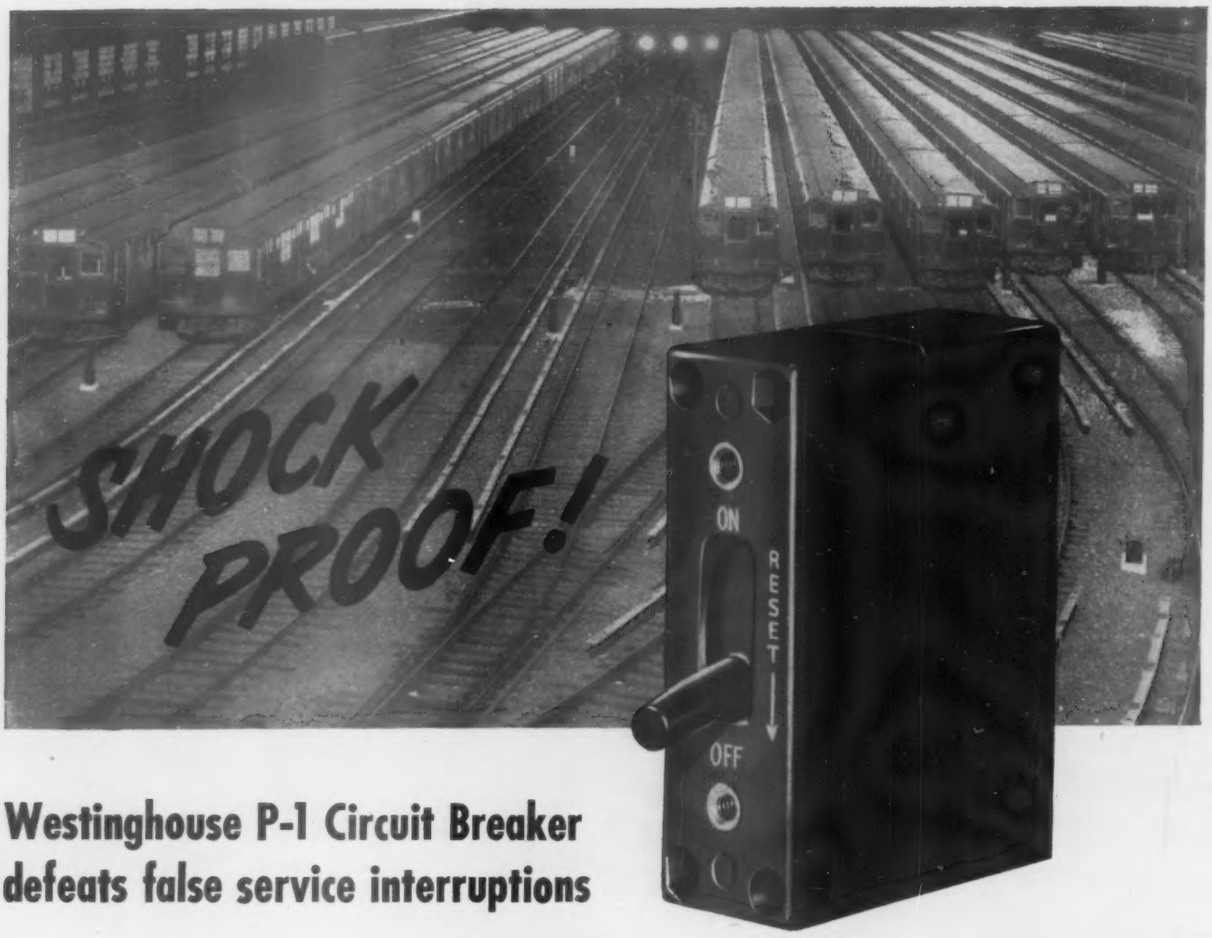
Recently, Pullman-Standard's hustling plant at Michigan City, Ind., turned out the *25,000th* PS-1, with the New York Central drawing the lucky number. Welcoming the new arrival are A. A. Logmann, works manager (on ladder); and below (left to right), Paul Behn, assistant works manager; R. M. Shaver, chief mechanical engineer of freight plants; and Gene Gardner, chief inspector of freight cars, New York Central System.

Pullman-Standard

CAR MANUFACTURING COMPANY

CHICAGO • NEW YORK • CLEVELAND • WASHINGTON, D. C. • PITTSBURGH • BIRMINGHAM • SAN FRANCISCO

Save with SAFER... SURER AB BREAKERS



Westinghouse P-1 Circuit Breaker defeats false service interruptions

Rough roadbeds are hard taskmasters for ordinary circuit breakers. Excessive vibration and shock can cause false switch tripping... interrupt electrical service needlessly. Westinghouse P-1 Circuit Breakers can take it—they are designed specifically for rough service.

The P-1 breaker is an adaptation of the Navy breaker used on PT boats. Here, P-1 type breakers proved their ability to withstand the roughest kind of operating conditions.

Rugged construction makes the difference. The case is made from heavy-duty Moldarta. Trip release mechanism operates *only* on sustained overloads—physical jarring cannot bother it.

Though sturdily built, the P-1 is small, compact. It combines both switch and protective device in a single unit. A bank of P-1's can be mounted in a panel requiring less space than separate fuse and switch units.

Booklet B-4081 describes all features of the P-1. Ask your Westinghouse representative for your copy, or write to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-30067

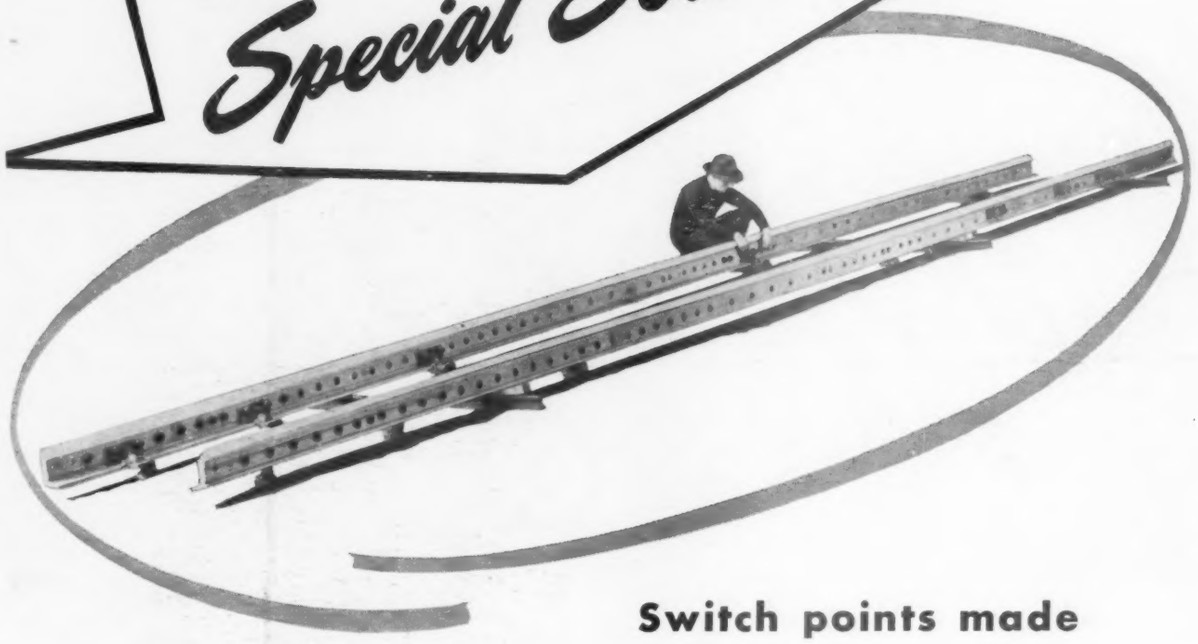
DESIGN TESTED AND VERIFIED IN THE Westinghouse HIGH POWER LABORATORY

YOU CAN BE SURE.. IF IT'S Westinghouse

AB CIRCUIT BREAKERS

THE COMPLETE LINE

A BETHLEHEM *Special Service*



Switch points made and heat-treated in any length to 45 feet

If you are considering the use of extra-long switch points—such as the ones shown here, for example—you'll find Bethlehem fully geared to make them for you. We have all the special equipment required for this work, including oversized planing and treating facilities that easily accommodate points up to 45 feet. Bethlehem is the only manufacturer able to heat-treat points of this length.

If heat-treatment is part of your order, you can be sure that specifications will be met. This important phase of the job is the responsibility of highly-trained technical men who are specialists in the twin fields of rail-steel production and metallurgy.

Orders for switch points in the shorter lengths are handled as carefully and expertly as those for the larger points. We welcome work in all sizes, and are confident that the jobs you entrust to the Bethlehem shops will be done to your entire satisfaction.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

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★ BETHLEHEM STEEL ★

the facts of piston life

Piston life in the first General Motors Diesel locomotives averaged 25 to 50 thousand miles. That's been increased through the years beyond 600 thousand miles, due to improved design and materials and better lubrication.

What advances the future will bring are already apparent in the present performance of these locomotives and the way they are helping to meet growing demands upon the railroads today.

GM DIESELS ARE THE BEST RAILROAD SECURITY

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS LA GRANGE, ILL.

Home of the Diesel Locomotive

In Canada: GENERAL MOTORS DIESEL LTD. London, Ont.

Where Steel Construction Counts

Experience shows that the high-strength steel cell construction of EDISON batteries is a very important reason for their successful use in axle-generator-battery systems in cabooses where the mechanical shocks incidental to freight-train operation put a premium on mechanical durability.

In other respects also, axle-generators and EDISON batteries are dependable, economical and practical as an electric power supply for cabooses. They are dependable and economical as proved by their many years of car lighting service. They are practical because they comprise an all-electric system, and, as such, can be maintained in their entirety by the railroad's electrical department.

And EDISON batteries, in addition to their great mechanical durability, withstand the overcharging and overdischarging inherent in generator-battery systems; they are light in weight; they deliver long life at low cost per year. Get a current price quotation; see how little higher it is than for batteries of comparable capacity which do not have steel cell construction. And consider how their long life further cuts costs by postponing the need for replacement in an inflation economy. EDISON Storage Battery Division of Thomas A. Edison, Incorporated, West Orange, N. J.

EDISON

Nickel • Iron • Alkaline

STORAGE BATTERIES

Stays Strong!

This rigid, one-piece, cast-steel beam (without rivets, welds, laps, or joints) retains its high initial strength indefinitely. There's nothing to shake loose—nothing to fall off—nothing for corrosion to attack except extra-thick metal sections of strong Grade "B" cast steel. Proper alignment of levers and rods is preserved, and piston travel requires resetting only as brake shoes wear.

For service and savings there's nothing like A.S.F. one-piece, cast-steel construction which permits the complete renewal of burned heads by welding-on replacement facings. This beam should last the lifetime of the car.

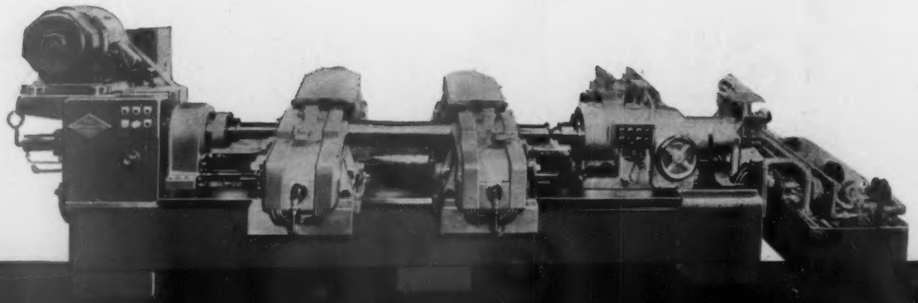
the Stronger, Lighter

A·S·F CAST-STEEL UNIT BRAKE BEAM

AMERICAN STEEL FOUNDRIES

MINT MARK OF ○ FINE PRODUCTS

NILES Axle Burnishing Lathe. Independently or simultaneously burnishes journals and fillets of new or refinished axles. Users report 50% higher production than on conventional machines.

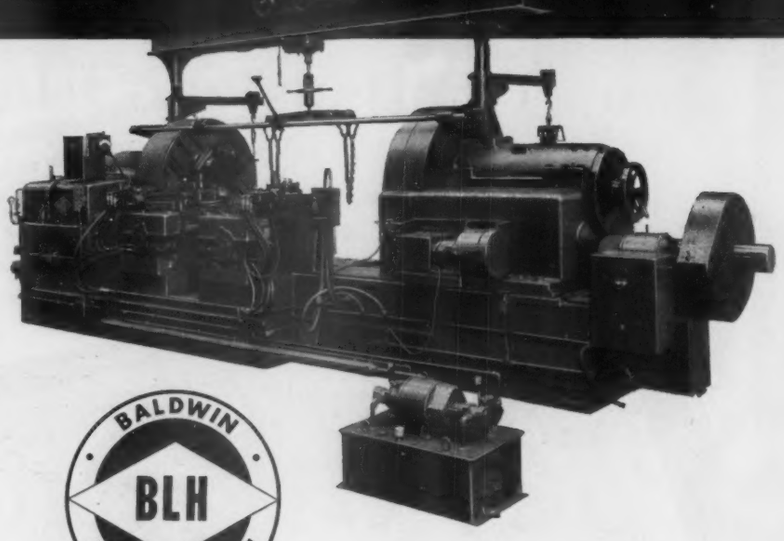


a BIGGER JOB AHEAD means a BIGGER JOB AHEAD

Be ready with these NILES

Getting bad-order cars and shopped locomotives back in service *quicker* produces the same result as buying new rolling stock—and it's a whole lot cheaper! Just check the records on these modern Niles railroad shop tools . . . you'll see how they are paying off for users in increased rolling stock availability.

NILES Car Wheel Lathe. One shop says, "Wheel re-turning time halved by this new machine." Designed to take pressure of carbide-tipped tools. Roughing cut is finish cut. Profiling attachment permits further saving in time per set.



A representative will be glad to tell you how Niles railroad shop tools can help you keep your shop production ahead of today's expanding needs. Write, wire or phone.

LIMA-HAMILTON DIVISION
Hamilton, Ohio

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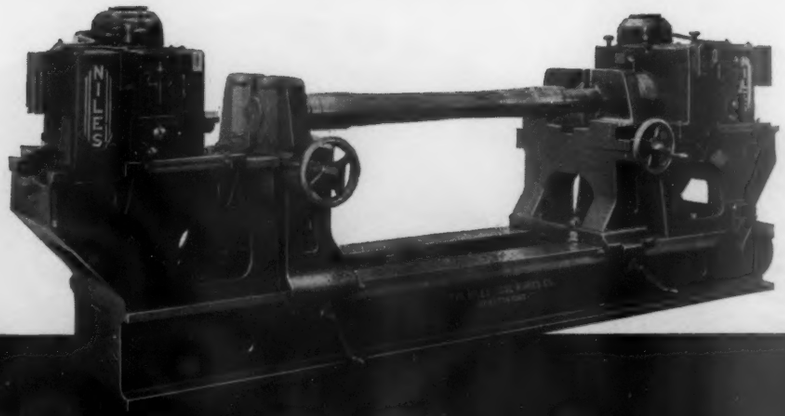
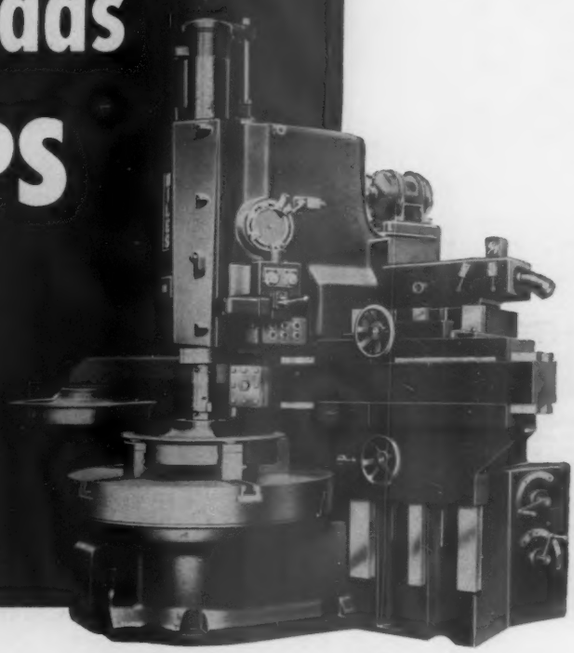
GENERAL OFFICES: PHILADELPHIA 42, PA.

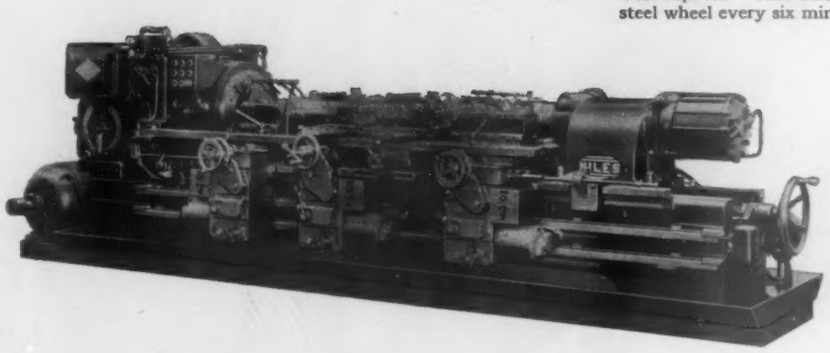


NILES Hydraulic Centering Machine. Centers new axles or renews centers on mounted or unmounted axles prior to turning. Permits easy checking of individual and related concentricity. Action is automatic. Assures high production and uniform dimensional results.

for the Railroads
for the SHOPS
TOOLS



NILES Hydraulic Diesel Wheel Borer. Speeds and feeds designed for carbide tools. Push button chucking and unchucking, automatic boring cycle. User reports: "Cast wheel every four minutes—steel wheel every six minutes."



NILES End Drive Axle Lathe. Developed after extensive research, to speed up this key operation. Machines axles over their entire length in ⅓ to ½ the time ordinarily required. Leaves no indentation from driving jaws.

LIMA-HAMILTON

OFFICES IN PRINCIPAL CITIES

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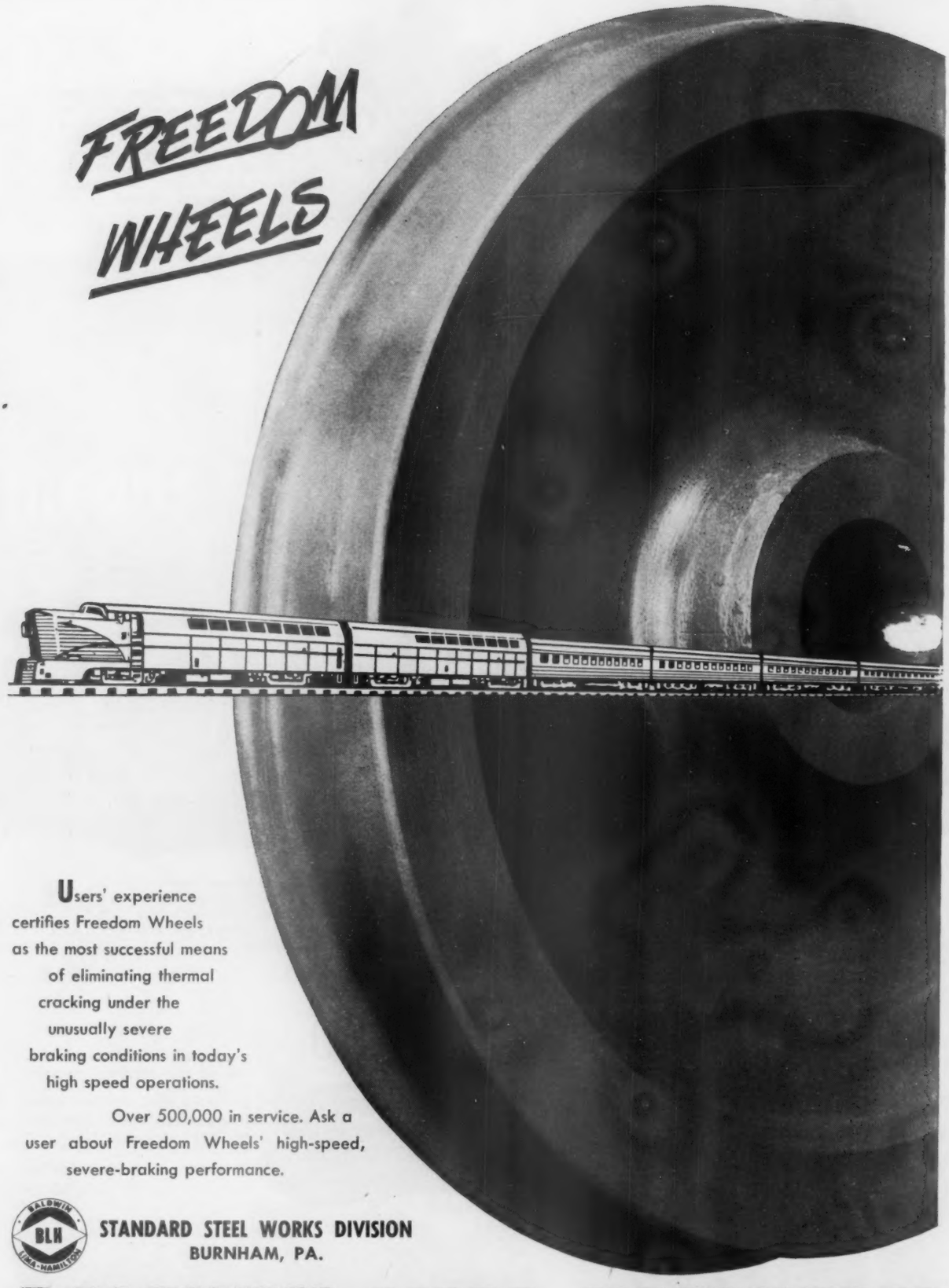

Users' experience certifies Freedom Wheels as the most successful means of eliminating thermal cracking under the unusually severe braking conditions in today's high speed operations.

Over 500,000 in service. Ask a user about Freedom Wheels' high-speed, severe-braking performance.

BLH

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BURNHAM, PA.

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WHO IS RESPONSIBLE FOR RECURRENT RAILROAD STRIKES?

In its issue of April 12 the San Francisco Chronicle published, under the heading "Who Scuttled the Rail Law?", what is probably the most complete and objective analysis of the causes of the present chaotic situation in railway labor relations yet to appear in any publication of general circulation. We quote in part:

"The end of the last national railroad strike brought an inevitable sharp sense of relief to the public—rescue from imminent and overwhelming catastrophe always does—but it brought no sense of permanent freedom from the threat of disaster. . . .

"The public had the right to expect that the [labor relations] process would be carried out without serious threat to the national welfare. And it is clearly not possible to paralyze the nation's rail system without laying hold of the nation's economic jugular vein and raising the immediate threat of chaos. That right has been disregarded, time and again, in the series of railroad strikes and threats of stoppage, to such an extent that the public is compelled, if it can, to discover what special causes underly this special situation, in order that it may correct them as an act of self-preservation. . . .

"It is absurd to hold that several hundred thousand railroad workers changed, in the course of a few years, from the most responsible, mature element of American labor to a disloyal group bent upon mass sabotage. They were, and they remain, normal, loyal American citizens, as ready as the next to do their share in defense of their country. The threat of strike in the war year of 1943, and the actual stoppages carried out in 1946 and 1951, were in no case intended as subversive acts nor regarded as such by the unions. In each case the threat was a fist cocked in full confidence that the cocking would be enough in itself to gain what was demanded.

"And in every case, the cocked fist or the thrown punch paid off in terms of greater gains for the unions. That, we believe, is the special reason for the breakdown of the National Railway Labor Act and for the aggravation of unrest and instability in the railway labor-industry relationship."

The Chronicle then proceeds to an outline of the salient actions in nationwide wage disputes on the railroads since 1926—showing how these disputes were settled over a period of 15 years without any threat whatever of work stoppage. It lays the blame for "scuttling" the Railway Labor Act exactly where the blame belongs, namely, on the late President Franklin D. Roosevelt—when he refused to support the "emergency board" he named in the 1941 wage dispute. The Chronicle goes further, however, and adjudges President Truman equally culpable for the continuance of the well-established habit (since 1941) of carrying all railway wage cases to the White House. The Chronicle concludes:

"It would be foolish for the nation to go all around Robin Hood's barn looking for a a law tough enough to halt railroad strikes until the more direct and obvious expedient had been tried. That would be for the public to put an end to the playing of presidential politics with the railroad labor relations picture."

This paper agrees with the Chronicle's analysis and conclusions, with two reservations, viz.—

(1) That President Truman deserves little or no blame for carrying on as he has the well established precedent of his predecessor, at least tacitly agreed to by Congress, of receiving all these wage cases at the White House; and

(2) That Congress has witnessed the defiance of the intent of the Railway Labor Act by the unions with White House collaboration for almost a decade, during which time it has done absolutely nothing to amend or strengthen the law.

The Railway Labor Act, as enacted in 1926, was intended to encourage pacific action in collective bargain-

ing by both management and labor unions. It was calculated to prevent strikes, not by specifically "outlawing" them, but rather by "mobilizing public opinion" against recalcitrants. A reasonable attitude by parties to a dispute was encouraged by the knowledge that, if the contestants were unable to agree among themselves, an "emergency board" of disinterested members would sit in judgment in the case. A logical assumption in such a situation would be that the party taking an extreme position could expect scant sympathy from such a board. The assumption was, further, that the findings of a board of respected citizens, appointed by the President of the United States, would carry great weight with public opinion—so that neither a railway union nor railway management would dare inflict a strike upon the country, to enforce a position condemned as unjust by a presidential board.

1941 "Break"

The belief that the "emergency board" provision of the Railway Labor Act would work in this salutary way was well founded. Railway-management relations on the railroads were carried on without untoward incident from 1926, when the Railway Labor Act became a law, until 1941. During this period the President was called upon to appoint "emergency boards" on only two occasions in nationwide wage disputes, and on both these occasions the findings of the emergency board were peaceably accepted by both parties.

But, in 1941, just before Pearl Harbor, the break came. An emergency board of high caliber, after intensive hearings and earnest deliberation, came out with a wage increase recommendation which the unions refused to accept. Instead of supporting his "emergency board," and appealing to railway union members over the heads of their leaders, to remain loyal to the spirit of the Railway Labor Act, President Roosevelt instructed his emergency board members to perform the humiliating task of wheedling more out of the railroads as mediators than these same men, sitting as a tribunal, had found it just to ask the railroads to pay.

From that day to this, hardly any important railway wage disputes have been finally settled either by collective bargaining or by "emergency boards." Since 1941 practically all such disputes have gone to the White House, and several of them have gone beyond the White House and resulted in nationwide strikes—*for which no individual striker has suffered any penalty whatsoever*, because no penalties are provided for in the law.

"Squarely Upon Congress"

President Truman did not create this situation. He inherited it. On one occasion, he somewhat hastily asked Congress for drastic antistrike legislation, which was refused him by Congress—which, for its part, offered no less drastic alternative. Instead, it has sat on its hands, doing nothing, while the situation has grown steadily worse. Considering the self-righteous refusal of Congress to give him the legislation he asked for, President Truman, perhaps not wisely but quite understandably, has not asked any further help from Congress. Instead, he has gone on doing the best he could—and as well probably as anyone could hope to do—to administer a procedure which he inherited in a hopelessly diseased condition. It would take a President with the unanimity of opinion behind him that Washington enjoyed to rally the public effectively against the antisocial behavior to which the railway unions became habituated by President Roosevelt. Yet in some such super-heroic action by the chief executive lies the only hope, short of legislation by Congress, by which it would be possible to restore the discredited Railway Labor Act to the commanding position of moral authority which it exercised prior to 1941.

When, for a period of almost a decade, a situation as bad as that in railway labor relations exists—arising from "loopholes" which have been found and utilized in legislation designed to protect the public interest in the conduct of such relations—the conclusion is inescapable that the responsibility for plugging up those loopholes rests squarely upon Congress.

GENERAL MACARTHUR AND TRANSPORTATION

Anyone with responsibilities of leadership, not excluding railroad people, will find material for profitable reflection in the spectacular dismissal of General Douglas MacArthur from government service, and especially in the even more spectacular manner in which he succeeded in turning a defeat into a triumph of colossal proportions.

A man who knows a situation from actual experience of it, instead of from mere reading—especially when even the reading may not be his own, but that of some "ghost"—is in an inherently strong position to defend and extend his opinions.

The advantages of this position can, however, be quickly dissipated if the man who holds it does not cherish his convictions with sufficient warmth to take obvious and dangerous risks in their defense.

Without consideration here of the merits or demerits of General MacArthur's views on national foreign policy, in comparison with those upheld by his opponents, it nevertheless remains a fact that his many years of actual and successful dealings on a high level with Oriental nations cannot help persuading a lot of people to the belief that the General must know what he is talking about. His willingness to uphold these opinions to the point of getting fired for them carries added conviction to many persons that here is a man who must be believed—in preference to opponents who have assumed no risks in defending their position.

Martyrdom, or the risk of it, always strengthens the

popular appeal of the martyr's cause—even when, as sometimes happens, there is nothing much else to be said in its favor. Cautious Claudes and Nervous Nellies carry little weight in influencing public opinion, no matter how righteous their cause may be. There are a lot of people in and around the transportation business who know from actual experience the evils resulting from public policy in this field, just as fully as General MacArthur knows the details of American relations with the nations of the Orient. But how many of these men, so deeply experienced in transportation and who know the evils arising from present public policy in the field, have the opportunity or the desire to risk anything vital in defending what they believe to be the truth?

It might be objected that General MacArthur took his risks over questions of national safety—matters of considerably more importance than internal public policy toward transportation. That objection can scarcely be sustained, however, because the forestalling of socialization of American industry takes second rank in importance to hardly any question of public concern.

The problems which vex the transportation industry, and the railroads in particular, will yield to leadership, just as do those in any other field where public opinion is a major factor. The methods which draw attention and support in the field of foreign policy would doubtless be equally successful if applied in any aspect of public policy.

HOW MANY KINDS OF ECONOMY IN NEW TOOLS?

Reduced consumption of power and reduced cost of tools are two items of savings which are frequently overlooked in planning a program for modernizing new machinery or purchasing new equipment. This point was made in a recent address to the Pacific Railroad Club by F. E. Molloy, assistant superintendent of motive power of the Southern Pacific. He said that a modern machine with sufficient power to handle a wide range of speeds and feeds may replace two or three older machines, each with a drive motor which consumes power. Southern Pacific experience has further shown that in many cases the cash savings in tool inventories and maintenance, which result from buying new machines or modernizing old, exceed savings in direct labor.

These two additional savings, along with any other advantages of improved machinery, such as higher quality of the finished work, deserve to be taken into consideration when studying the desirability of such improvements. So too must account be given to the fact that an old machine replaced by a new machine in the main shop may replace a still older machine in a secondary shop, thereby effecting savings at the secondary point. If all of these savings are not considered, entirely too many worthwhile improvements may be rejected because their full value is not realized.

When management is asked to approve an expenditure for new shop machinery or for improving an existing machine, the factor that normally looms largest is an anticipated increase in production. It is a mistake to allow the decision for or against the proposed improvement to depend solely upon this one factor, when other factors of equal importance are involved.

"WE CAN'T AFFORD IT"

"We have worried along for a long time without the St. Lawrence Seaway and it would seem to be good judgment to wait until we get through spending money like drunken sailors on the defense program before taking on any unnecessary expense regardless of the opinion of some of the official family."—*Grand Rapids, Michigan Times.*

"The seaway is a misnomer as a war emergency item. The idea of its backers apparently is to get a large appropriation as a down payment and get us committed to the completion of a project that will cost unestimated billions. This is no time to fall for such a hazy undertaking."—*Indianapolis Star.*

"One of the luxury items which could very well be cut out of the Truman budget, pending fairer weather, is the St. Lawrence seaway proposal. The estimate of cost made by proponents of the ship canal is $573,000,000; opponents say the cost will run to two billion dollars. The seaway obviously cannot be built for 573 million dollars; at present inflated costs, we doubt if two billions would get it done.

"We are not to get steel for needed highway purposes; yet we propose to build a seaway which would take enormous quantities of steel and cement. We are faced with a shortage of labor; yet we propose to turn many thousands of workers over to a ship-canal project. And while we are trying to get electric-power installations as widely dispersed as possible, and of as much capacity we propose to turn a vital proportion of our electrical manufacturing industry over to making machinery for the St. Lawrence.

"This project simply does not make sense in our present war-preparation economy. It wouldn't be ready for war, should war come. As to the talk that it would help tap Labrador's new iron ore deposits, bringing that ore into the midwest, that possibility lies in the future; Labrador's iron is not an immediate essential for war output. What hearing would proponents of a bigger Lakes-Gulf seaway get on the ground—very firm ground—that Venezuelan ore could be brought up our river system to midwest mills?"—*Rockford, Ill., Star.*

One of the Pennsylvania cars to which the new type of equipment has been applied

M.-U. Cars

With New Four-Motor Drives

Ride Better and Wear Longer

By R. A. WILLIAMSON
F. C. KREITLER
W. S. O'KELLY*

Pennsylvania equips fifty cars for multiple-unit service on its 11,000-volt a.c. lines with type of equipment which puts all of the car weight on driving axles

*R. A. Williamson, Manager, Railroad Rolling Stock Division; F. C. Kreitler, Motor Engineering Division; and W. S. O'Kelly, Control Engineering Division; all of General Electric Company, Erie, Pa.

Fifty new a.c. electric traction equipments for multiple-unit cars have recently been delivered by the General Electric Company to the Pennsylvania. They are a radically new type of 25-cycle, a.c multiple-unit car equipment employing a resistance acceleration scheme, and the fact that they have the motor capacity distributed over all four axles is an innovation in a.c. car design.

Since the motors are truck-mounted, instead of axle-hung, the unsprung axle loading is greatly reduced. This results in better riding qualities and reduced wear and tear on both motor and truck parts because of the corresponding reduction in road shock. The self-contained gear units are semi-permanently axle-mounted in roller bearings. This completely eliminates friction bearings and the annoyance of gearing troubles resulting from misalinement. Oil-bath lubrication of the gearing insures long, quiet, dependable operation. Smaller and lighter parts facilitate handling. The possibility of dismounting either motor or gear unit without disturbing the other will simplify maintenance. The weight of the four trac-

Interior of one of the modernized Pennsylvania a.c. multiple-unit cars

tion motors complete with gear cases, pinions, gears and couplings is less than that of any a.c. two-motored equipment built in this country for the same service. Moreover, since all axles are motored, the equipment operates at low values of wheel-to-rail adhesion. Full advantage has been taken of this to use a series-parallel motor connection, thus permitting the development of a new a.c. cam-operated main controller.

The new motor is a so-called low-flux, 6-pole, 25-cycle, single-phase, series motor with commutating and compensating windings. The light weight is achieved by making the maximum operating speed 3,900 r.p.m. This corresponds to a road speed of 90-m.p.h. with 36-in. wheels and a 128/28 gear ratio. The commutator is 9¾ in. in diameter so that the maxmium permissible speed is 10,000 ft. per min. It is of the archbound type using the simple, inexpensive, yet effective, ring nut construction that has been employed in d.c. motors of similar size for years. The commutator has been proportioned so that the stresses are lower than those in most existing a.c. commutator motors. The armature core is 14 in. in diameter and is wound with single-piece pre-insulated coils. It is similar to that used in the d.c. motors of the four-motor equipments in service on 600 volt subway cars and railroad multiple-u nit cars.

The armature is mounted on a 60-mm. ball bearing at the commutator end, and a 70-mm. roller bearing at the drive end. These bearings carry very little load other than the weight of the armature, since the gear reaction is taken by the bearings in the gear unit.

The stator windings are made of pre-insulated conductors, and, since the slots for the compensating winding do not have overhanging tooth tips, the compensating coils are completely insulated before assembly. As there are only six brushholders on each motor, fixed brushholder supports are used, mounted on three frame arms.

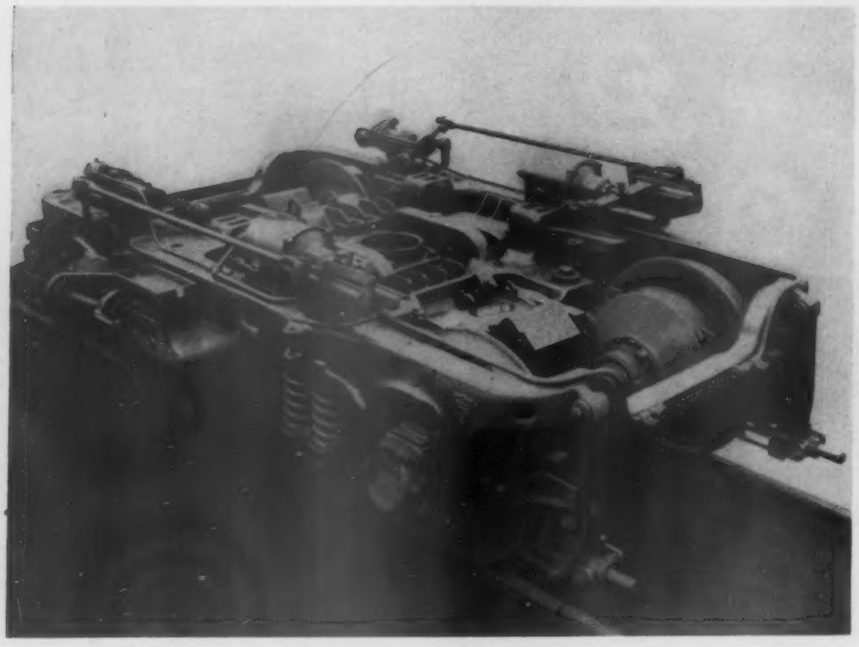
The motor is self-ventilated by a cast aluminum fan bolted to the drive-end armature head. The ventilating air is taken in through commutator covers which are built as a series of baffles designed to keep dirt, water and snow out of the motor. Air is discharged at the fan end. The arms over the air outlet are skewed and have rounded edges to keep noise to a minimum. The absence of separate blowers and air ducts for traction motor ventilation improves the layout under the car.

Simple Maintenance

The motor is supported by, and overhung from, the truck transom with a key and five bolts. To remove a motor, with the truck out from under the car, it is merely necessary to unbolt the coupling, remove the five bolts holding the motor to the transom and lift the motor out of the truck. An intermediate bracket is used, fastened to the truck by means of a key. Three vertical bolts through the key hold the motor down and two horizontal bolts at the bottom of the bracket keep the motor from swinging. Four cylindrical rubber bushings with their shear axes tangential to the motor frame are located between the motor and the mounting bracket. The rubber is positioned to be soft in the tangential direction and stiff in the vertical direction. As a result, about 93 per cent torsional isolation is realized so that only 7 per cent of the 50-cycle torque pulsation is transmitted to the truck.

The motor drives the axle through a separate gear reduction unit, using helical gearing, with a flexible coupling between the motor and the gear unit. The pinion is carried on tapered roller bearings and the gear unit is mounted on the axle with tapered roller bearings to take the thrust of the helical gearing. The gear units are oil lubricated and are practically identical with those now in service on d.c, four-motored, multiple-unit car equipments.

Since the motor is truck-mounted, it requires a flexible coupling in the drive shaft to the gear unit. This is a spherical-gear type coupling with a rubber insert sur-



Truck showing motors with mounting brackets in place and separate gear unit on the axle

rounding the internal gear. By using relatively soft rubber in the insert, approximately 95 per cent of the 50-cycle torque pulsation delivered by the armature is absorbed in the coupling.

New Control Arrangement

The control of the car is radically different from that of other a.c. multiple-unit cars in this country. A new, heavy-current, cam-operated control similar to that used on 600 volt d.c. subway cars and d.c. multiple unit railroad cars was developed. Resistance is used for acceleration in place of the conventional transformer taps formerly employed on a.c. multiple-unit cars. The control differs from the conventional d.c. pattern in that the voltage applied to the motors is changed after the controller has run through the resistance in one direction instead of changing the motor connections as on d.c. cars. This reduces the losses in the resistors. The controller is a relatively small, compact unit and replaces all but two of the electro-pneumatic tap switches used on the older type a.c. equipments. It provides positive mechanical interlocking of the sequence, improves reliability and reduces risk of damage from malfunctioning. The controller contacts do not interrupt current and there are no switching transients of the type prevalent in the old style "preventive coil" control.

The cam controller is unique in that the cam-closing torque peaks of the mechanism are reduced to practical values by the use of both opening and closing cams and overlapping contacts. For the first time a compact, direct-operating power controller, with a capacity of 1,350 amp. continuous and driven by a small d.c. motor, has been developed for this type of application.

The traction motors are connected two in series and two circuits in parallel. The low value of maximum operating adhesion (6 per cent) makes it unnecessary to connect the motors in parallel. The series connection halves the current and doubles the voltage that would be used if all four armatures were connected in parallel. The compensating windings in the motors further reduce the currents to bring them within limits that can be handled practically by a cam-operated controller. Overspeed protection is not required because the cars will balance at a safe speed. If slipping should occur during acceleration, the built-in fans prevent the motors exceeding the design speed limit.

The main power transformer is of the askarel-filled type hung from the center sill of the car. The secondary winding of the transformer has only three terminals, providing 240 volts and 385 volts as required for the traction motors. The ground bushing of the 11-kv., 25-cycle primary is connected to the transformer tank which is in turn grounded to the car body. Four sets of cables connected to axle ground brushes act as shunts to carry primary current from the car body around the rubber motor mountings, flexible couplings, and roller bearings to the axles.

A pantograph grounding switch furnishes the primary protection. It is tripped by a thermal relay in case of lower order overloads or by an instantaneous relay in case of higher current faults. The instantaneous relay prevents lowering the pantograph during fault conditions and lowers the pantograph after the substation breakers clear the fault. The car is protected by a thyrite lightning arrester. Other protective devices include transformer overheating thermostat, traction-motor overload relays and ground detection relays.

With all axles motored and a resistance type controller used for motoring, the next logical step in this development would be the use of dynamic braking. This has not been done on railroad multiple-unit cars up to now, but it offers attractive possibilities. Rapid transit trains have shown an increase in brake shoe life of 500 to 1,300 per cent when dynamic braking was provided.

Suburban trains having all axles motored and equipped with dynamic braking can furnish quiet, fast, dependable service at new standards of comfort. They offer the railroads reasonable first cost, together with better and more intensive utilization of rolling stock through more versatile and dependable equipment. Because they employ smaller, lighter and less expensive parts which are more convenient and easier to handle, they will appreciably reduce maintenance expense.

Servicing diesels at Venice, Ill. (above), and in Chicago (right)

Road's first year without steam locomotives proves eminently successful . . .

All-Diesel Operation Exceeds G. M. & O.'s Expectations

As of September 30, 1949, the officers of the Gulf, Mobile & Ohio-Alton system burned all their bridges behind them. Having operated numerous diesel locomotives in freight and passenger service for some years prior to that date, they abandoned steam operations entirely, based on the experience previously gained. Down came all coal chutes and pumping stations; all cinder pits were torn up; all steam locomotive repair facilities were retired or converted to diesel maintenance. The steam locomotives remaining on hand were sold or scrapped and, as described in *Railway Age* of December 24, 1949, page 36, this system, with almost 3,000 miles of line, became the first line of such length to change over entirely to diesel operations.

The change-over in motive power was by no means a shot in the dark, so far as the G. M. & O. was concerned, since that road had facts and figures available from which the highly probable results could be estimated with considerable accuracy. Nonetheless, the first year's all-diesel operations on the system may be said to have exceeded expectations.

For the purpose of accurate comparison of locomotive utilization, the last 12 months during which the G. M. & O. was predominantly a steam railroad have been selected, as against the first year of all-diesel operations. For the year ending September 30, 1945, the principal steam freight locomotives averaged 45,637 miles each, or at the rate of 125 miles per day. For the first year of all-diesel operation, ending September 30, 1950, the principal diesel freight locomotives averaged 78,475 miles each, or 215 miles per day. This increase in locomotive utilization — 72 per cent — was not obtained by any sacrifice in tonnage—quite the contrary.

Because of the acquisition of the Alton and the years of part diesel and part steam operation, as well as a material difference in the tonnage handled, it is difficult to give any true comparison of the relative number of units required for all-steam as against all-diesel operation.

As of October 31, 1950, the system fleet of locomotives —all diesel units—was as follows:

Switch	31
Road-Switch	52
Freight	132
Freight-Passenger	12
Passenger	16
Total	243

It is, however, safe to say, and the figures amply prove it, that far more steam units would have been required to handle the present volume of traffic under all-steam operation.

This increased utilization was not, by any means, an

Diesel switchers making up a freight train at Bloomington, Ill. (left). Yard service operations have improved vastly since dieselization. The "Alton Limited" (right) in the yards at Bloomington

automatic result of dieselization. Each regular freight run on the railroad was studied carefully to discover any possible way in which a unit, that would otherwise lay over or perhaps even return light, might be used. Local runs were given particular attention during this study, as being most susceptible to improper locomotive utilization. The maintenance program and the location of the shops where such maintenance would take place was given a system-wide study so that proper maintenance of the locomotives could be accomplished with the least possible effect on their optimum revenue service time. In addition, without steam locomotive maintenance to complicate matters, the mechanical department has been able to work out ways and means of lessening the time the diesels must stay in the shops, without interfering with the excellence of their overall maintenance.

The last year of all-steam operation on the G. M. & O.-Alton, ending in September 1945, was, of course, a year of swollen wartime traffic. During the year ending September 30, 1950, the system handled 81 per cent of the gross ton-miles handled in the comparable year mentioned, with 56 per cent of the freight train-miles (ordinary and light) and with exactly 50 per cent of the freight train-hours. Sampling various months throughout the year reveals that, in November 1949, 78 per cent of the November 1944 gross ton-miles were handled, with 56 per cent of the freight train-miles and 49 per cent of the freight train-hours. In May, 73 per cent of the 1945 gross ton-miles were handled, with 54 per cent of the freight train-miles and 46 per cent of the freight train-hours.

It does not follow that all these vastly improved operating results happened "bang—just like that," merely because diesel units were substituted for steam locomotives. Some of the improvement has only an indirect connection, if any, with the change-over. Much of it is the result of a thorough and intelligent going over of every phase of operations and a considerable percentage is

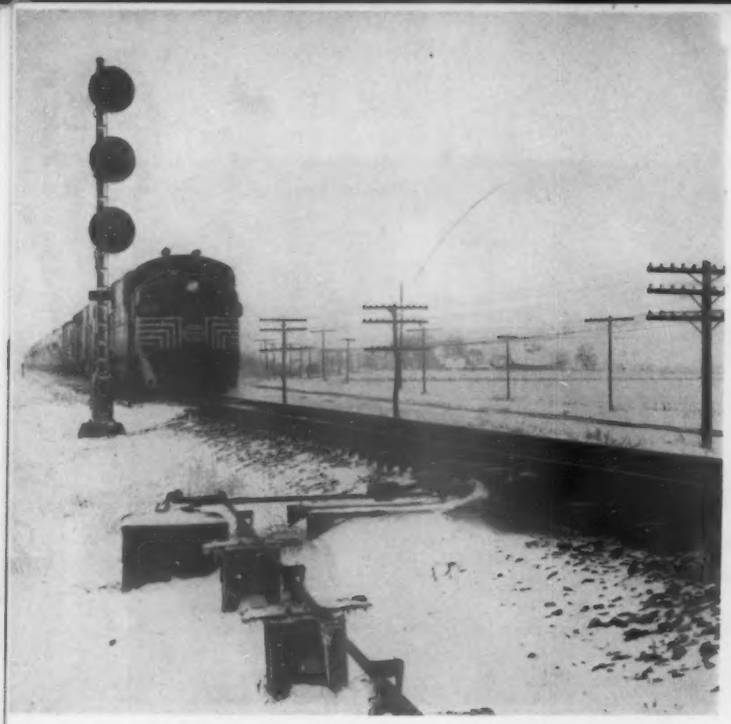
At the Iselin shops (Jackson, Tenn.) both freight and passenger locomotives are given complete overhauls

attributable to the cumulative effect of a number of small increases in operating efficiency, most, but not all, made possible by the 100 per cent dieselization of the system.

In the year ending September 30, 1945, the gross ton-miles per train-mile averaged 2,053, as compared with 2,973 for the year ending September 30, 1950, an increase of 45 per cent. Gross ton-miles per train-hour averaged 35,694 in the 1944-45 period, as against 58,583 in 1949-50, an increase of 64 per cent. In both instances, the percentage increases in the last three months of the period were greater than the average, showing that the improvement was still accelerating. Proof of this was amply evident in October and November 1950, when all-time peaks in operating efficiency were reached. Gross ton-miles per train-mile reached a new height of 3,323 in October and were 3,210 in November, the October percentage increase over October 1944 being 59 per cent. Gross ton-miles per train-hour established a new record in October 1950, amounting to 61,662, or 71 per cent greater than in October 1944, and they went up still further in November, reaching 62,341, or 76 per cent greater than November 1944. In December another record was created, with 62,365. During that month also gross ton-miles per train-mile were 3,177. The calendar year 1950 shows an even better record than the first 12 months of diesel operation, with an average train load of 3,041 tons; gross ton-miles per train-hour, 59,690 and an average freight train speed of 19.6 m.p.h.

In the first year of 100 per cent dieselization, the system showed an increase of 13 per cent in freight train speed as compared with the last year of all-steam operation. The average freight train speed for the year ending September 30, 1950, was 19.73 m.p.h. as compared with 17.51 in the year ending September 30, 1945. Thus, in the first year of all-diesel operation, the G. M. & O.-Alton handled an average of 920 tons more per freight train an average of 2.2 m.p.h. faster than during the last twelve months of all-steam operation.

In freight service (facing page and right) horsepower is proportional to load and service requirements



The power switches and signals for authorizing train movements save time by permitting closer meets to be made

40 Trains on Single-Track C.T.C.

Train operations are coordinated and operating expenses have been reduced by a change from six locally controlled mechanical interlockings, at sidings, to power switches included in dispatcher-controlled system

The New York Central in 1950 installed centralized traffic control on 39 miles of single-track main line between Mattoon, Ill., and Pana, where 38 to 41 trains are operated daily. This is part of the 252-mile Illinois division between Indianapolis, Ind., and St. Louis, Mo., all of which is double track, except 40 miles between Sandford and Mattoon yard, and 38 miles between Karl, just west of Mattoon, and Pana.

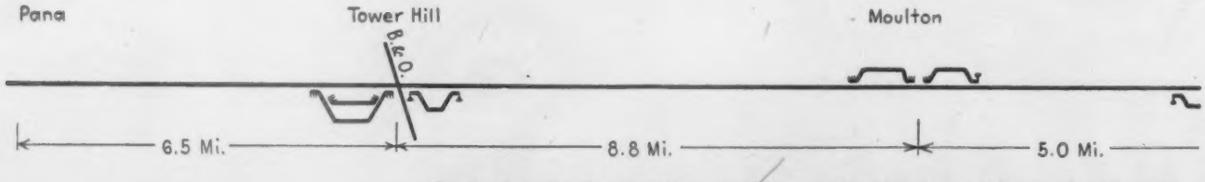
In the 39 miles between Mattoon and Pana, six mechanical interlockings previously included the operation of one switch at the end of double track and a total of 14 mechanical switches at ends of sidings; power switches at ends of sidings were controlled from the nearest interlockings. The 1950 project involved the removal of these six mechanical interlockings, power switch machines being installed to operate the 13 switches formerly in the mechanical plants, and the installation of a C.T.C. system, with a machine in the dispatcher's office, to control the switches at the end of double track and the sidings, as well as the signals at these switches. Now, with the new C.T.C. system, the dispatcher controls the switches and signals directly. With information shown on the illuminated track diagram on the C.T.C. machine, the dispatcher can watch the progress being made by trains and on a minute-to-minute basis can control switches and signals to make close meets. Thus, by direct control, train movements are closely coordinated to save time. The levermen formerly employed at these interlockings were needed for similar work elsewhere on the railroad.

Between Mattoon and Pana changes were made at the various interlockings as follows:

At Karl, about 1 mile west of Mattoon station, a single-track branch line of the Illinois Central crosses the New York Central. The mechanical interlocking which had been in service was removed. Signals for authorizing train movements on both roads are now controlled as part of the C.T.C., which also includes control of a new power switch machine at the west end of double track, previously operated as part of the interlocking.

At Gays, 7 miles west of Mattoon, there are two crossovers between the main track and the siding at a point near the center of the siding, which is 8,200 ft. long. The old mechanical interlocking at these crossovers was removed. New power switch machines and signals at these crossovers are included in the C.T.C. A power switch machine and signals, previously in service at the west end of the siding, and controlled from the interlocking at Gays, are now controlled by the C.T.C., as is also the electric lock on the hand-throw switch at the east end of the siding.

At Windsor, 13 miles west of Mattoon, there was a mechanical interlocking which included two switches, one at the east end of a 5,000-ft. siding west of the station, and one at the west end of a 2,000-ft. siding, or commercial track, east of the station. A power switch



Track plan showing locations of sidings and railroad crossings on the 39 miles

at the west end of the siding was controlled from the interlocking. The mechanical interlocking was removed, and power switch machines and signals at these switches are now included in the C.T.C. A power switch and signals at the west end of the siding, previously controlled from the interlocking, are now controlled by the C.T.C., as is also an electric lock at the hand-throw switch at the east end of the commercial track.

At Middlesworth, 19 miles west of Mattoon, there was a mechanical interlocking which included a switch at the west end of the eastward siding and a crossover between the main track and westward siding. the east end of which extended also to a pocket track. This mechanical interlocking was removed, and three power switch machines and signals were installed under control by the C.T.C. A power switch at the east end of the eastward siding, formerly controlled from the interlocking, is now controlled by C.T.C., as is also an electric lock at the hand-throw switch at the west end of the westward siding.

At Moulton, 24 miles west of Mattoon, there was a mechanical interlocking, including a switch at the west end of the westward siding and a switch at the east end of the eastward siding. This interlocking was removed, and two power switch machines were installed which, with the signals, are now controlled by C.T.C. A power switch and signals at the west end of the eastward siding, formerly controlled from Moulton interlocking, are now controlled by C.T.C., as is also an electric lock at the hand-throw switch at the east end of the westward siding.

At Tower Hill, 33 miles west of Mattoon, a single-track branch line of the Baltimore & Ohio crosses the New York Central. A mechanical interlocking here included protection for this crossing and also two switches leading to two sidings west of the crossing; it also included remote control of two power switches and signals at the west end of the two sidings. The mechanical interlocking was removed. The signals for directing Baltimore & Ohio train movements over this crossing are now controlled by C.T.C. from Mattoon, as are the New York Central signals and two new power switch machines at the siding switches, as well as the switches and signals at the west end of the two sidings.

The automatic block signaling previously in service in this territory remains unchanged. Primarily, the change was to place the control of siding switches, and signals at these switches, in the C.T.C. system rather than in interlockings.

Track Circuits on Sidings

This project includes track circuits on sidings which are effective not only in operating the track-occupancy indication lamps on "sidings" on the control panel, but also in the control of signals. When a switch is reversed, the signal governing movements into that siding is cleared to display the aspect Red-over-Red-over-Yellow, and the approach signal displays Yellow-over-Red-over-Green, rule 284. With this information, an engineer can bring his train up to and through the turnout at the speed for which it was designed, rather than approaching prepared to stop. If the siding is occupied, the Red-over-Red-over-Yellow aspect can be displayed on the home signal, but the approach signal displays Yellow-over-Red, with the bottom light not burning. The No. 10 turnouts at ends of sidings are suitable for 15 m.p.h., and the No. 16 turnouts and ends of double track for 30 m.p.h.

The leave-siding dwarf signals can be cleared to display Green if two or more blocks ahead are unoccupied. If only the first block is unoccupied, the aspect is Yellow-over-Red. If the first block is occupied, such a dwarf can be cleared, under directional control, to display Yellow to direct a train on the sidings to get under way and pull out behind a train of the same direction prepared to stop short of train ahead.

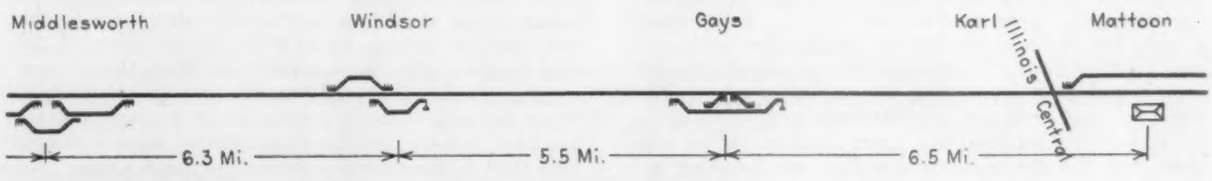
Eastward signal 1492 is on a heavy eastward ascending grade, so that a train stopped at this signal would have difficulty in starting. This signal, therefore, is equipped with a second unit to display Red-over-Yellow as an aspect to authorize a tonnage train to pass at slow speed without stopping. This aspect is controlled directionally, and a leading eastbound train must pass beyond the first cut section—4,200 ft.—before the aspect of signal 1492 changes from Red to Red-over-Yellow.

Microphone Listener

On one of the line poles on this grade there is a special box, or "listener," which houses a microphone and a selector connected to the dispatcher's telephone circuit. When the dispatcher figures that a certain train should be "on the hill," he cuts in the microphone which picks up the sound of the train if it is approaching or passing. Thus, the dispatcher has information in addition to that shown by the track occupancy lamps on the C.T.C. panel. There are two track-occupancy lamps for each section of main track between sidings, so that the dispatcher knows when a train is half way between sidings.

At Karl, just west of Mattoon, the Illinois Central makes switching moves over the crossing. During such periods, the New York Central signals cannot be cleared for moves over the crossing. Therefore, if the I.C. is making switching moves when there is a N.Y.C. train coming, the dispatcher presses a button which causes a loud-sounding electric-operated air horn to blow at the crossing, thus requesting the I.C. train crew to clear the crossing. If the approach section is not cleared, a time element must operate before N.Y.C. trains can move over the crossing.

This centralized traffic control project was planned and installed by railroad forces under the jurisdiction of J. J. Corcoran, signal engineer of the New York Central system, at Cleveland, and A. M. Gilbert, assistant signal engineer, at Cincinnati. The signaling equipment, including the C.T.C. system and control machine, was furnished by the General Railway Signal Company.



of single track centralized traffic control between Pana and Mattoon

The Class 31 machine has both alphabetic and numeric keyboards

One Machine Does Many Accounting Jobs

By NOAH GARNER
Auditor Freight Accounts
Southern

The Southern finds new National Cash Register machine's counter capacity, alphabetic and numeric keyboards and its automatic carriage return make it an economical performer

The office of the auditor of freight accounts of the Southern's accounting department recently began use of the National Cash Register Company's Class 31 (electric) typewriter-accounting machine for performing much of the road's freight accounting. It has been found economical and versatile in handling such work as (1) abstracts of waybills for both carload and less-carload traffic; (2) combination road control and station registers for interline received traffic; (3) combination station register and local audit abstracts; (4) recapitulation of abstracts; and (5) underlying detail for commodity statistics. Its outstanding characteristics, the ones which make the machine so fit for these tasks, are its great counter capacity, the fact that it enables one operator to do a complete bookkeeping and typing job at the same time, and its ability automatically to establish cross-balances.

Block System Accounting

The Southern's freight accounting is constructed on a group or block system rather than a unit audit plan, i.e., the final result is brought as nearly as possible in direct contact with the original documents, with unnecessary intermediate documents and steps eliminated. All similar audit items are brought together at the fountain head of the audit and are carried through to the maximum extent possible, as a group rather than a unit. For example, the station register for local carload received traffic is prepared throughout the month in a consolidated form (Fig. 1) to enable a complete audit on local traffic of all like items with one check. Local waybills between two given stations, taking the same rate for the same commodity, are recorded to permit block verification of extensions on waybills. One check of the rate for all traffic of the same commodity between two points is all that is necessary.

The National Class 31 machine is readily applicable to this job. The 10 accumulating counters of the machine enable us to record the weight, freight, advance charges and prepay to show totals by rates and commodity groups. At the same time, there are accumulated the grand totals of weight, freight, advance charges and prepay for station balance purposes. In other words, the machine provides, in the initial audit of local carload waybills, sufficient counter capacity to establish in one writing all the block totals that are needed throughout the entire audit and statistical compilations of local carload traffic.

The counter capacity of this machine is an advantage in making up recapitulations of abstracts; these storage facilities of the Class 31 not only provide for the recording and addition of the weight, freight, advance charges, prepay and five roads' proportions, but also a cross-balance or an absolute proof that the calculations on the abstracts are correct. As each line's proportion of the total freight charges is recorded on the form, that amount is automatically subtracted from the total freight charges. When the last carrier's proportion on a given abstract has been recorded on the recapitulation form a double zero (00) is automatically thrown by the machine. (See Fig. 3) This indicates that the abstract has previously

Class 31 machines in this office are performing different jobs, as the varied arrangement of stop bars shows

been correctly added, that the charges have been properly prorated between carriers, and that no error has been made in transferring the information from the abstracts to the recapitulation sheets.

The same zero balance is made by the machine when the operator seeks the total of the recapitulation of abstracts.

If the total of all lines' proportions does not balance with total revenue, the amount of the difference automatically is printed at the extreme right-hand margin of the form. This has the effect of localizing any errors made in the distribution of revenue on the abstracts, as well as any errors made in the recapitulation of the abstracts. It saves account clerks much time that formerly was taken up in re-adding recapitulation sheets to effect a balance of the road settlement. The machine is so accurate in indicating non-balancing entries on recapitulation sheets that the balancing clerk merely corrects the errors indicated, rather than devoting time to finding the error.

Accumulator Capacity Advantageous

In the preparation of the combination road control and station registers on interline received traffic (Fig. 2) the extensive accumulator capacity of the National machine shows up to particularly good advantage. We are able to record on combination road control and station register forms, by individual forwarding roads, throughout the month, waybills having destination at a given (Southern) station. Recorded on the road control form are the freight, advance charges and prepay. The machine shows the total of the three columns and stores those totals in three other counters of the machine in order to provide an entry for the station balance, i.e., total amount, billed by all roads, which the station must take into its accounts.

For the abstracting waybills covering carload traffic the full alphabetical and numerical keyboard is immediately at the hand of the operator, so that he can do a complete so-called bookkeeping and typing job at one and the same time. Neither keyboard is an adjunct of the other. Each is complete within itself, making for maximum speed and capacity in operation of both the numerical bookkeeping machine and an electric typewriter.

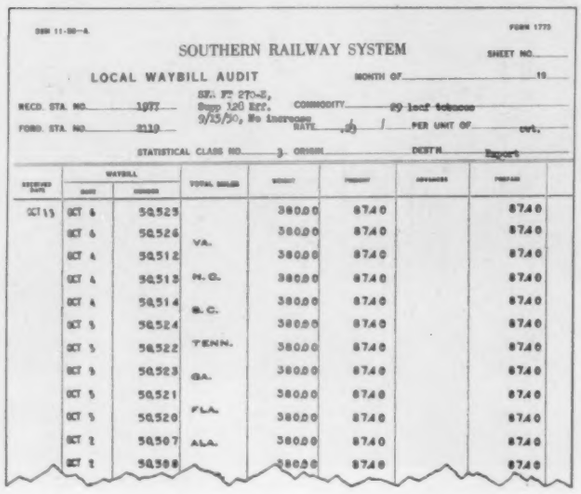
Pre-Headed Abstracts

A substantial part of the Southern's carload interline received traffic is recorded each month on so-called preheaded abstracts (Fig. 4), on which have been printed all information except the waybill reference, car initial and number, weight, freight, advance charges and prepay. When this information from the waybill is recorded on the abstracts, the operator is able, by using both the alphabetical and numerical keyboards, to write in on one line both the car number and its initials, as well as the other necessary information. These two complete keyboards are so associated through the construction of the machine that the clerk can switch his operations from one keyboard to the other without a break in the movement of his hands, and without creating any break in the even movement of the machine.

Another job on which we use the Class 31 to advantage is the preparation of less-carload abstracts on road-to-road percent traffic (Fig 5). In doing this work, the speed and automatic carriage return of the machine make it possible for the operator to keep his hands moving in perfect rhythm without stopping. The waybill reference, the weight, freight, advance charges and prepay, are listed on the abstract and the machine carriage is automatically returned. There is no break in the

movement of the operator's hands between the recording of prepay in the right-hand margin of the abstract and the showing of the waybill reference for the next entry to the left-hand side of the abstract.

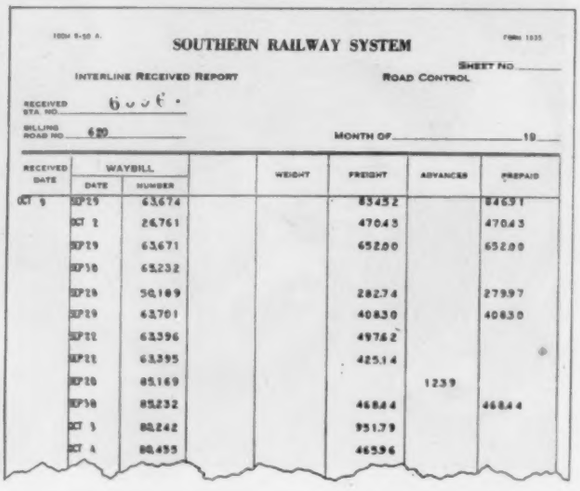
When a machine operator changes from one class of freight accounting to another, it is not necessary that he move away from his position to make adjustments in the alinement of the machine. All that is necessary to change from abstracting to the preparation of statistical summaries or the preparation of local or interline station registers, etc., is to change the removable stop bar located on the front of the machine.



SOUTHERN RAILWAY SYSTEM

LOCAL WAYBILL AUDIT

RECD. STA. NO.	1977								
FORD. STA. NO.	2119								
5	OCT 6	50525		38000	8740		8740
	OCT 6	50526	VA.	38000	8740		8740
	OCT 6	50512		38000	8740		8740
	OCT 6	50513	N. C.	38000	8740		8740
	OCT 6	50514	S. C.	38000	8740		8740
	OCT 5	50524		38000	8740		8740
	OCT 5	50522	TENN.	38000	8740		8740
	OCT 5	50523	GA.	38000	8740		8740
	OCT 5	50521		38000	8740		8740
	OCT 5	50520	FLA.	38000	8740		8740
	OCT 2	50507	ALA.	38000	8740		8740
	OCT 2	50508		38000	8740		8740



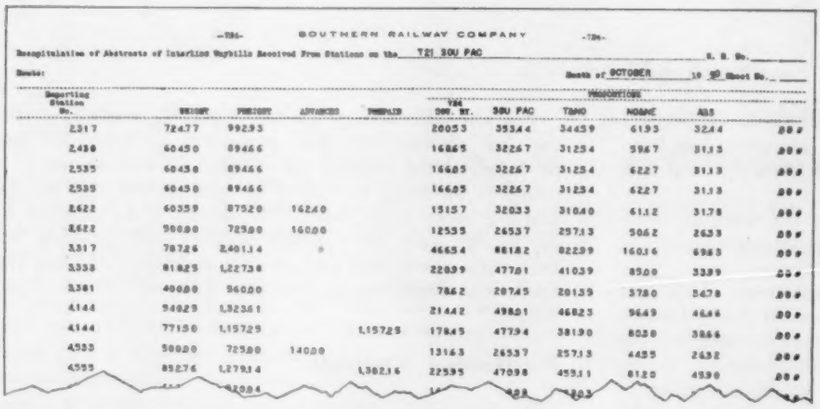
SOUTHERN RAILWAY SYSTEM

INTERLINE RECEIVED REPORT — ROAD CONTROL

RECEIVED STA. NO.	6
BILLING ROAD NO.	629

MONTH OF ____ 19__

RECEIVED DATE	WAYBILL DATE	WAYBILL NUMBER	WEIGHT	FREIGHT	ADVANCES	PREPAID
OCT 5	SEP29	63674		85452		84691
	OCT 2	26761		47043		47043
	SEP29	63671		65200		65200
	SEP30	65232				
	SEP28	56109		28274		27997
	SEP29	63701		40830		40830
	SEP22	63396		49762		
	SEP22	63395		42514		
	SEP28	85169			1239	
	SEP30	85232		46844		46844
	OCT 3	88242		95179		
	OCT 4	88455		46596		



—726— SOUTHERN RAILWAY COMPANY —726—

Recapitulation of Abstracts of Interline Waybills Received From Stations on the 721 SOU PAC R. R. Div.

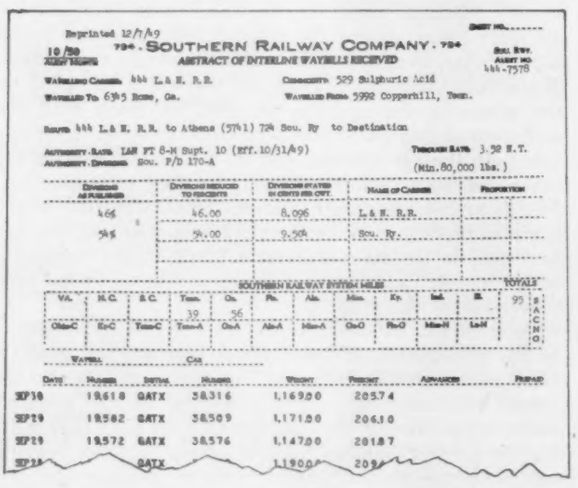
Route: Month of OCTOBER 19 50 Sheet No.

Reporting Station No.	WEIGHT	FREIGHT	ADVANCES	PREPAID	726 SOU. RY.	50U PAC	T&NO	NOAMC	ABS	
	2317	72477	99293			20053	35344	34459	6193	3244	00
	2438	60450	89466			16865	32267	31254	5967	3133	00
	2535	60450	89466			16605	32267	31254	6227	3133	00
	2535	60450	89466			16605	32267	31254	6227	3133	00
	2622	60359	87520	16240		15157	32033	31040	6112	3178	00
	2622	90000	72580	16000		12555	26537	25713	5062	2633	00
	3317	78726	2401314			46654	88182	82289	16036	6983	00
	3338	81825	1,22738			22899	47701	41039	8500	3389	00
	3381	40000	96000			7862	20745	20139	3780	3478	00
	4144	94023	1,32361			21442	49801	46823	9649	4646	00
	4144	77150	1,15725		1,15725	17845	47794	38130	8050	3864	00
	4533	50020	72580	14000		13163	26537	25713	4455	2632	00
	4555	852.76	1,27914		1,30216	22595	47098	45311	8120	4530	00
			132004						428	1803	

Fig. 1. Above left—The station register for local carload traffic

Fig. 2. Above right—Interline received traffic is recapped on this combination road control and station register

Fig. 3. Left—Double zeros (00) in right column are proof that mathematically no error has been made in divisions, or in copying figures from face of waybill. This is the recapitulation of abstracts of waybills received from stations on a foreign road



Reprinted 12/1/49

10/50 — 726 - SOUTHERN RAILWAY COMPANY - 726 — ABSTRACT OF INTERLINE WAYBILLS RECEIVED

Waybills Camden, 4th L. & N. R.R. — Cinnamon 509 Sulphuric Acid

Waybill No. 6305 Rome, Ga. — Waybill Rome 5992 Copperhill, Tenn.

Route 4th L. & N. R.R. to Athens (5741) 726 Sou. Ry to Destination

Authority - Rate: LAN FT 8-N Supt. 10 (Eff. 10/31/49) — Through Rate: 3.52 N.T.

Authority - Divisions: Sou. F/D 170-A (Min. 80,000 lbs.)

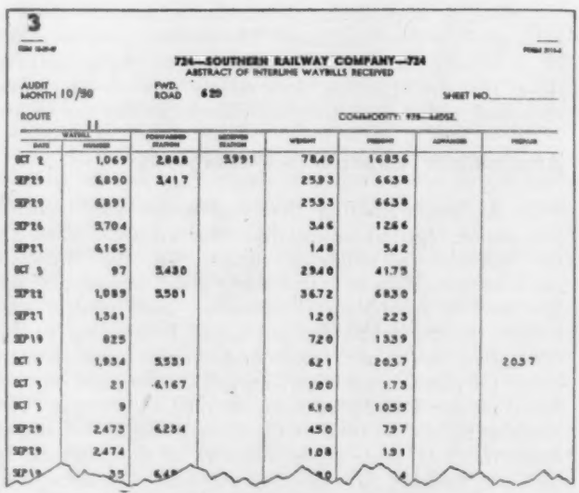
Divisions as Published	Divisions Reduced to Percents	Divisions Stated in Cents per Cwt.	Name of Carrier	Proportion
46%	46.00	8.096	L. & N. R.R.	
54%	54.00	9.504	Sou. Ry.	

SOUTHERN RAILWAY SYSTEM MILES — TOTALS

VA.	N.C.	S.C.	Tenn.	Ga.	Fla.	Ala.	Miss.	Ky.	Ind.	Ill.	99
			39	56							
GbsC	KnC	YssC	Yss-A	GnA	AbA	MbA	GbO	RbG	MbN	LbN	

Waybill Date	Waybill Number	Car Initial	Car Number	Weight	Freight	Advances	Prepaid
SEP30	19618	GATX	38316	1,16900	20574		
SEP29	19582	GATX	38509	1,17100	20610		
SEP29	19572	GATX	38576	1,14700	20187		
SEP28		GATX		1,19000	209		

Fig. 4.—Pre-headed abstract of interline waybills received



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726—SOUTHERN RAILWAY COMPANY—726

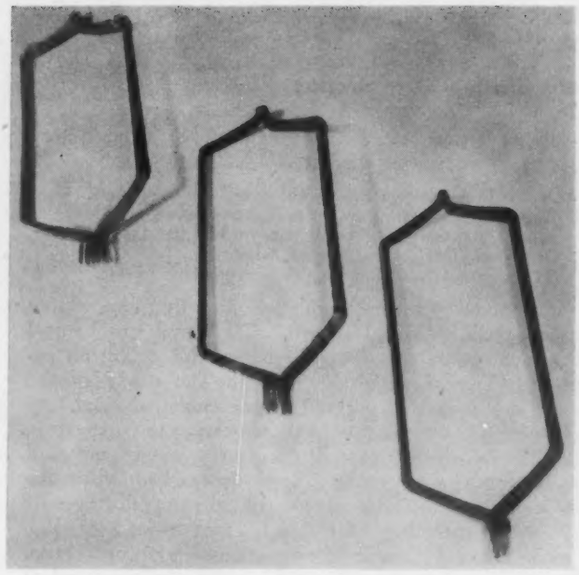
ABSTRACT OF INTERLINE WAYBILLS RECEIVED

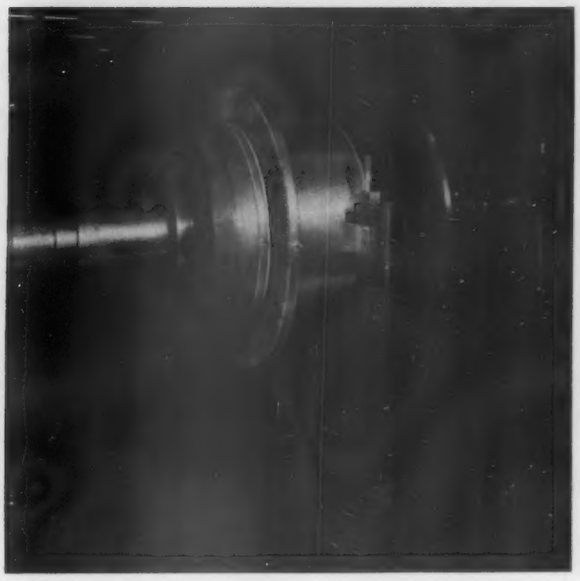
AUDIT MONTH 10/50 — FWD. ROAD 629 — SHEET NO.

ROUTE 11 — COMMODITY: 975—LADIES.

WAYBILL DATE	WAYBILL NUMBER	FORWARDING STATION	RECEIVING STATION	WEIGHT	FREIGHT	ADVANCES	PREPAID
OCT 2	1,069	2888	3991	7840	16856		
SEP29	4890	3417		2593	6638		
SEP29	4891			2593	6638		
SEP26	3704			346	1246		
SEP21	4165			148	542		
OCT 5	97	5430		2940	4175		
SEP22	1,089	5501		3672	6830		
SEP27	1,341			120	223		
SEP19	825			720	1339		
OCT 3	1,934	5531		621	2037		2037
OCT 3	21	4167		100	173		
OCT 3	9			610	1055		
SEP29	2473	6234		450	797		
SEP29	2474			108	191		
SEP19	35	548		20	4		

Fig. 5.—Abstract of interline waybills received





Left—Single-piece motor armature coils. Right—A commutator is a piece of precision equipment made up of many parts which must be subjected to shock, wide temperature variations, and high centrifugal forces

Service Wrack of Locomotive Electrical Machinery

PART II*

Electrical stresses, although not perceptible to the physical senses, cause deterioration of diesel electrical locomotive equipment

By A. H. CANDEE
Transportation Engineer
Westinghouse Electric Corporation

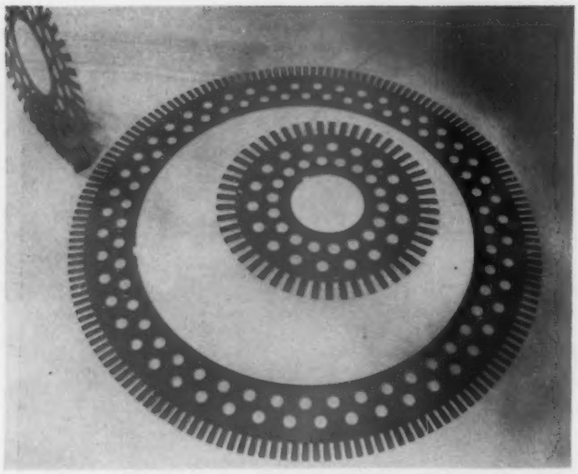
Electrical stresses are of an entirely different nature than mechanical forces and are not perceptible to the physical senses in the way that mechanical forces are. These arise solely from the electrical pressure (voltage) necessary to force the flow of current and thus transmit energy from an electric generator to a motor or other device.

The development of electric pressure results in the flow of electric current in inverse proportion to the resistance which opposes such flow. For instance, if a circuit of low resistance is connected to a d.c. generator when it is developing voltage, a relatively high current will flow, but if the resistance be high, the current flow will be small. This is in accordance with a basic electrical law, i.e., Current equals Voltage divided by Resistance. In order to direct this current flow to prescribed paths, the conductors forming this path are separated from surrounding or adjacent conducting parts by materials which have very high resistance to the flow of current, known as insulating materials.

*Part I of this article appeared in the April 23 *Railway Age*.

Insulation is one of the most important elements of electrical equipment construction. It is subject to greater wrack, perhaps, than any other component of the apparatus.

Normally, practically all of the power current flows through the conductors. But when subjected to electrical pressure, current tends to flow through the insulation and across its surfaces (creepage). The opposition to flow through an insulating material is known as its dielectric strength. The dielectric strength of porous materials such as cloth, asbestos and paper, is low, but glass, porcelain, rubber and mica have excellent dielectric qualities, the latter perhaps the best of all for the insulation of rotating equipment. The breakdown voltage of mica is several thousand volts per thousandth of an inch thickness. However, the distance which must be allowed along an exposed surface between a conductor and an adjacent metal part or another conductor is



•Punchings, stacked to make generator and armature cores

generally well over a full inch per thousand volts and preferably more if space is available. If an insulating assembly is undisturbed, the dielectric strength does not change materially or rapidly, but resistance to creepage along insulating surfaces can change tremendously with an accumulation of dirt and moisture on such surfaces. Coatings of carbon or brake-shoe dust are especially dangerous.

As indicated previously, the high power output demanded of railroad rotating machines make it necessary to work them to their full limit. To attain the high electrical capacity of modern railway electric motors and generators, it has been found expedient to operate them at temperatures far beyond those customary for industrial applications. It is necessary, then, to use insulating materials which will not deteriorate rapidly under temperatures of 320 to 392 deg. F. Of these, inorganic materials such as mica, glass, porcelain or asbestos are suitable. Organic substances (containing compounds of carbon) such as cotton, linen, paper, plastics, lacquers, some varnishes, or wood, tend to char or deteriorate at these high temperatures and in addition to losing their insulating qualities they may actually become conductors. It is essential, then, that the insulation of railway motors and generators should contain a minimum amount of these organic materials.

The insulation of armature and field coils requires that materials be flexible enough to wrap closely around conductors or groups of conductors. Porcelain and glass in their normal forms do not fit this requirement. Glass and asbestos tapes are suitable but are porous, so that their dielectric insulating qualities are poor. Mica, being available in flakes, can be built up into sheets on paper or cloth backing with the flakes overlapped (to increase the internal surface creepage distances through the sheet) and held in such position by a bonding material, the finished sheets being sufficiently flexible for bending. Even the best available insulation contains substances which deteriorate under severe temperature conditions.

After coils are insulated, formed to shape and wound into a machine, the whole assembly is immersed in an impregnating varnish and afterward baked. This process holds the coils firmly in place and reduces the probability of damage to insulation even though the high temperatures have acted to reduce the mechanical strength of organic binding tapes and bonding between the mica flakes.

Deterioration of Insulation

These are five main causes for the wrack of machinery insulation on railway vehicles:

Mechanical abrasion due to looseness and vibrations.
Changes in insulating qualities due to heat.
Internal movement of conductors within the insulation.
The absorption or trapping of moisture.
The accumulation of foreign substances on surfaces.

The reduction in the quality of insulation can seldom be observed by visual inspection, although mechanical abrasions can sometimes be seen and dirt or oil on exposed surfaces is generally evident. The safety of the whole is a matter of periodic measurement of insulation resistance to note the rate of deterioration in comparison with the known standard for a newly wound piece of apparatus. The breakdown point is reached when the resistance to the flow of electric current through or across the insulating system is reduced to such a value that the leakage current destroys its insulating properties.

Abrasion, of course, is mechanical in nature, and if serious damage has been done it can seldom be repaired by patching. Insulating qualities due to destruction of organic substances likewise cannot be restored without complete replacement.

The movement of conductors within the insulating wrappings is a natural result of expansions and contractions with the wide changes in temperatures incident to locomotive operation. If the bonding of the mica has been weakened by high temperatures, shifting of the flake mica is possible which may reduce the internal surface creepage distances. Replacement of windings is the only cure.

The absorption of moisture or the accumulation of oil or dirt on insulation surfaces are influences which are susceptible of improvement by thorough cleaning, heating and the application of an additional varnish coating.

The best method for recording the deterioration of this insulation resistance of electric machinery is to keep a running record of megger tester readings and temperature of the machine at the time of testing, converting each reading to the resistance value at a fixed temperature so that comparisons can be made with previous measurements. However, this is not the whole story, for it is also important to detect weaknesses between portions of a circuit insulated from each other. A recent development known as a surge comparison tester, may be used to indicate and locate such weaknesses.

Internal Temperatures

The temperature of electrical equipment would rise continually (when in service) to a point of self destruction if none of its heat were removed. Within rotating machines natural air currents are not effective and ventilating air must be moved under pressure in quantities sufficient to carry off this heat.

The prime source of heat in control apparatus arises from current flow, this heat being proportional to the square of the ampere flow multiplied by the electrical resistance, or C^2R. If the current is doubled through a device having a fixed resistance, the heat liberated is multiplied by four, and if this current is tripled, nine times as much heat is generated. It is this square

characteristic of heating that makes electrical overloads dangerous to equipment and necessitates limiting them to short duration.

Within a rotating machine, heat is generated in a number of ways, among which are the flow of electric current, repeated magnetic reversals, the flow of stray currents in metallic parts and mechanical friction. Of these, the one which creates the greatest wrack of parts is the heat generated by the flow of power current.

Escape of heat is retarded by the low heat conductivity of electrical insulation and the heat generated in the winding materially exceeds that caused by magnetic reversals. Thus, the temperature of the copper and that of the steel core may differ by as much as 100 deg. C. under heavy current conditions, such as when starting a train or when negotiating short steep grades.

Examination of the effect of wide differences in the temperature of windings and of surrounding steel armature cores shows that some terrific internal mechanical forces can be established. Assuming that an armature is wound while both the steel core and the coils are at room temperature—around 25 deg. C.—and that under heavy load conditions the core reaches a temperature of 50 deg. C. and the copper of the coil 150 deg. C., a 16-in. length of steel core elongates by approximately four thousandths of an inch while the copper elongates by 34 thousandths—a difference of 1/32 in. This amount of movement, if restrained, can exert a force in excess of 15,000 lb. Obviously, there are frequent longitudinal movements of portions of the coils due to expansion, no matter how tightly they have been fastened. Evidence of this movement usually shows at the ends of the slots, where the coil deflects sharply, or under the banded portion of the end turns where movement chafes the insulating material under the coil end turns. Many unexplained failures may be attributed to this cause, such as fatigued and broken leads or frayed insulation at the slot ends. Frequent repetition of expansion differentials are also a prolific source of trouble in other parts of the locomotive.

Ventilation

Ventilation is important to all electrical machinery and apparatus, yet it is responsible for definite operating deterioration, chiefly because the ventilating air carries dirt, dust, harmful gases, moisture and other foreign substances which may be deposited on windings or lodged in the machines. Because of the compact construction, a visual inspection cannot always detect the presence of paper, rags, lint, dirt accumulations, and like obstructions which may clog air passages and thus restrict the dissipation of internal heat. Sand and gritty material entrained in the air stream will wear commutators and cause brushes to stick. Sulphurous gases may combine with moisture to form acids. Oil vapors, always present in diesel-electric locomotives, will deposit on surfaces and collect dirt, which materially lowers the surface creepage resistance of insulation, especially where carbon dust, steam locomotive cinders, or coal dust are present.

Ventilating air is cleaned before it enters the electrical devices, but lack of room and cost reduce the possibility of a thorough cleaning. The entrance and deposit of some foreign substances may be accepted. However, if the interior of the locomotive is kept free of dirt accumulations and if oil is carefully wiped up, the contamination of ventilating air within the body will be considerably reduced and the wrack from surface deposits will be minimized.

Copper is the basic material used for conductors in locomotive electrical systems. It has many desirable characteristics for this purpose. It melts at 1,080 deg. C. (1,976 deg. F.), can be forged, rolled, drawn or machined easily and may be soldered or brazed with little difficulty. It hardens when it is mechanically worked and can be annealed by heating to a temperature of 200 to 325 deg. C. It has a few undesirable characteristics, however, which directly affect the life of electrical devices. For instance, it takes a permanent set if overstressed, and will break much more easily under repeated flexing than iron, steel, and other familiar metals. It is these characteristics which sometimes contribute to limited life of electrical apparatus and circuits.

An electrical system comprises a multitude of wires, cables, straps, connectors, shunts, flexing fingers, studs and bolts, coils, and similar parts in which copper is used. Cables are usually of stranded copper wires and, as such, will withstand flexing much more readily than solid wires, but even then some of the strands may break if this flexing is concentrated. Shunts are likewise vulnerable, usually being made of small copper wires braided flat or twisted. Copper studs or bolts, when tightened, then subjected to the normal heat generated by current flow, may stretch and tend to take a permanent set, and cause loose connections unless tightened again, which (if often repeated) eventually contributes toward failure. Similar flexing and deformation effects take place in armature coils subjected to alternate heating and cooling cycles. All of these result in the aging of copper conductors which cannot be detected by practical methods of inspection or test.

Conclusion

The service wrack of locomotive electrical machinery is unavoidable and is much greater than found in the majority of electrical applications. It results from the severe mechanical punishment imposed upon a motive power unit which must roll at high speed over a track structure that can never be perfect, and from the widely variable electric current flow to produce all of the tractive-force demands of railroad service. Contributing to this deterioration are the limitations in space and weight as imposed by locomotive dimensions and capacities and also the contaminated atmospheres encountered by railroad motive power. In spite of the severity of this service, the electrical machinery has shown a degree of reliability and of low repair expense which is worthy of attention. This record, in the face of the severe adverse service conditions, some of which have been discussed here, engenders a respect for the engineers who design the equipment, and the workmen who construct it, but most of all for the skilled maintenance personnel who keep it in its highly reliable operating condition throughout its life.

THE MONON VALUES ITS PASSENGER BUSINESS

"In spite of the unfavorable results of passenger operations, every effort has been made to maintain the quality of Monon passenger service at the high level to which the traveling public has been accustomed. In the opinion of the management, the friendly regard for the railroad, generated by fast and comfortable all-weather service to the Indiana communities reached by the road, is an important asset of the business, and is worth preserving, even at some cost in the form of operating losses in this division of the business."—*From the annual report of the Monon for the year 1950.*

The power sweeper clears debris from the floor of the station concourse, which has an area of 16,500 sq. ft., in 30 min., or twice as fast as a three-man pushbroom crew

Removing soot and cinders from the passenger platforms in the trainshed, an expensive task by hand methods, is a simple procedure with the power sweeper

Mechanized Sweeping Cuts Housekeeping Costs

A power sweeper now sweeps the floors in the North Western's passenger station at Chicago, replacing pushbroom crews, with the result that a better, cheaper job is being obtained

Housekeeping costs at the Chicago passenger terminal of the Chicago & North Western have been reduced substantially. The reason is that the debris left by the 80,000 or so people who use the station daily is now cleaned up with the aid of a motorized power sweeper which, operated by one man, has replaced the six to eight men who formerly did the work with pushbrooms. What's more, the machine has so simplified the entire

Cleaning the sidewalks flanking the station was impractical from a cost angle until the motorized sweeping equipment was put into service. Now these areas are on the regular sweeping schedule

The taxi ramp just outside the baggage claim desk and the street-level waiting room become quickly littered with baggage claim stubs which are difficult to pick up with pushbrooms. The power sweeper scoops them up easily

operation that, without additional cost, a more intensive program of housekeeping is possible.

Platforms Easily Cleaned

Certain areas in the station which were difficult to clean because of lack of practical methods are now on the regular sweeping schedule. One of these includes the eight long passenger platforms in the trainshed. Because of the soot-and-cinder type of soilage found there, cleaning the platforms by hand was impracticable, but now, with the power sweeper, these areas are kept as clean as the rest of the station.

Also impractical for pushbroom crews was the sweeping of the sidewalks flanking the station. For the power sweeper, however, the task is a simple procedure, and is usually done at night when the machine can operate at its high sweeping speed of 6 m.p.h. The taxi ramp and the floor in front of the baggage claim department are two other areas that are now on the regular program of mechanized housekeeping.

The power sweeper in operation at the North Western station is a product of the G. H. Tennant Company, Minneapolis, Minn. It drives like a car, sweeps a 36-in. path, turns in a radius of 65 in., and has a sweeping capacity of about 50,000 sq. ft. per hr. in open areas. The unit incorporates a dual pickup system. As the machine moves along, an enclosed cylindrical brush spins rapidly, hurling dirt and trash forward into a removable hopper, which has a capacity of 9 cu. ft. At the same time an 11-in. high-volume vacuum fan draws the light dust from the brush compartment, which is "sealed" to the floor by a flexible rubber skirt.

No Dust Nuisance

The dual system thus permits the machine to pick up such debris as cigarette butts, candy and gum wrappers, discarded newspapers and baggage checks, paper cups, etc., and at the same time to remove dust, soot, and cinders from crevices and cracks that cannot readily be swept by hand. And because of the sealing action of the rubber skirt, this can be done without creating a dust nuisance.

GENERAL NEWS

Stabilizer Johnston Approves Escalator Raise for "Non-Ops"

Follows recommendations of "emergency panel" in sanctioning ceiling-piercing increase of six cents per hour; annual cost will be about $130 million

Administrator Eric Johnston of the Economic Stabilization Agency on April 24 approved the additional six-cents-per-hour wage increase due railroad non-operating employees under the escalator clause of their March 1 agreement with the carriers. In sanctioning the raise, which will be the first to pierce the stabilization program's "ceiling," Mr. Johnston followed recommendations of the "Temporary Emergency Railroad Wage Panel" which he appointed to consider the matter.

As reported in *Railway Age* of April 16, page 47, the "emergency-panel" idea was President Truman's. Members of the panel were Chairman William M. Leiserson, former chairman of the National Mediation Board; Lloyd K. Garrison, former chairman of the National War Labor Board; and Frank M. Swacker, a New York attorney who has served on several emergency boards created under the Railway Labor Act.

Their assignment was to consider the "non-op" escalator clause in the light of the stabilization program which provides generally that increases awarded in agreements entered after January 25, 1951, must not raise wages by more than 10 per cent above the January, 1950, basis. Under that program, the "non-ops" would be entitled to a raise of about 15 cents per hour. Their agreement of March 1 gave them an increase of 12½ cents per hour in basic rates, bringing them to within 2½ cents of their "ceiling."

Based on Price Index

Thus the ceiling-piercer was the additional six-cent increase which became due April 1 under the escalator clause. That clause calls for increases of one cent per hour for each point of increase above 178 in the consumers' price index published by the Bureau of Labor Statistics. The six-cent increase due as of April 1 is based on the February 15 index which was 184.2.

The annual cost to the railroads will be about $130 million, including the cost of extending the increase to employees whose wages usually follow the "non-op" pattern. Approval of the increase was favored by labor and management spokesmen who appeared at an April 13 hearing held by the "emergency panel." (See *Railway Age* of April 23, page 36.) Also, the Department of the Army, which is operating the railroads under President Truman's seizure order of last August 25, had announced that it was "ready and willing to authorize payments [under the escalator clause] as soon as it can legally do so."

Stabilizer Johnston's approval order authorizes payment of the increase to the "non-ops"; to employees of the Railway Express Agency and employees of other carriers covered by so-called "stand-by" agreements; to those to whom such increases are usually extended on the basis of "established custom and practice"; and to any other "related employees." Mr. Johnston issued the order because "the findings of the panel demonstrate that collective bargaining in the railroad transportation industry is unique, and, within the framework of wage stabilization policies, requires the application of special standards to the matter here presented."

Among "standards" which guided the panel, its report said, was the Defense Production Act's purpose of "maintaining sound and productive labor relations" as well as "stabilizing the economy."

Reference was also made to the fact that the "non-op" agreement was reached at the White House under the auspices of Dr. John R. Steelman, assistant to President Truman, and to escalator clauses of agreements with the Switchmen's Union of North America and Railroad Yardmasters of America. The escalator clauses of these agreements have been working because the agreements were entered prior to January 25.

Moreover, it was suggested that other unions representing operating employees may get an escalator clause free of the "freeze" if the memorandum of agreement signed at the White House on December 21, 1950, becomes the basis for settlement of their still-pending cases. That pact was rejected by general chairmen of the train and engine service brotherhoods whose leaders had signed it.

Other Factors in Decision

All of which left the "non-ops" in a position less favorable than that of other railroad employees, the report pointed out. And this was their plight despite the fact that "they had reached substantial agreement with the carriers on escalation prior to January 25," although the agreement was not executed until March 1. Meanwhile, the "pattern of escalator clauses" was "certainly fixed" in the railroad industry prior to January 25, the report also said.

Other factors in the panel's recommendations were its determination that it would be "inequitable" to penalize railroad employees as a consequence of the slowness of their collective bargaining procedures; the Army's willingness to order payment of the increase; the inseparability of the escalator clause from other provisions of the agreement and thus the danger that a new pact might have to be negotiated; and the theory that "escalator clauses

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are not of themselves unstabilizing, because under them wage increases occur only *if and after* consumer prices have risen."

The panel recognized that increases in railroad wages might result in freight-rate increases. In that connection, however, it went on to recall that railroad representatives had testified at its hearing that "there is no certain relationship between wages and rates . . . and the I.C.C. may require . . . the absorption of some or all of the wage increases without rate changes."

The report also predicted that escalator clauses will be "definitely a stabilizing factor" in the railroad industry —"if prices are effectively controlled."

THIS CENTRAL OF NEW JERSEY FERRY, the "Elizabeth," made its inaugural run across the Hudson river between the road's Jersey City, N. J., and Liberty-West streets, New York, terminals on April 19. Among the passengers were C.N.J. President E. T. Moore, Mayor James T. Kirk of Elizabeth, N. J., and about 400 commuters. The "Elizabeth," built by the Bethlehem Steel Company at its Staten Island, N. Y., Mariner's Harbor yard, is the third C.N.J. ferry of that name. The first operated from 1867 to 1901 and the second from 1904 to 1942. Seven C.N.J.-owned ferries are now in service making their frequent daily runs between Jersey City and New York

Canadian Roads Ask Higher Rates

Suggest 14 or 15 per cent, to yield $64 million a year

(Special to *Railway Age*)

A new departure in Canadian railway freight rates—ceilings to limit increases on basic commodities—was proposed by the Railway Association of Canada on April 23 when it asked the Board of Transport Commissioners for a general $64-million a year freight rate increase, to become effective on June 1, and designed to offset the added cost of the 40-hour week which goes into effect on that day.

The association suggested two alternative bases for the requested increase. One basis would provide for a flat increase of 14 per cent in all rates, except on coal and coke, on which rates would be increased by 10 cents per ton where the present rate is $1 per ton or less, by 15 cents where the present rate is between $1.01 and $2, and by 20 cents where the rate is now $2.01 or more per ton.

Alternative Proposal

The alternative suggestion would provide for the same increases on coal and coke, and for an increase of 15 per cent in other rates, subject, however, to maximum increases per hundred pounds of 6 cents on lumber and articles taking lumber rates, 2 cents on pulpwood and fuel wood, 9 cents on livestock, and 20 cents on fresh apples. This basis also calls for increases of 1 cent per hundred pounds, or 20 cents per ton, on building sand, gravel, crushed stone and stone screenings handled in bulk in open-top cars.

The stipulated maximum increases under the alternative proposal are estimated to save shippers of the specified commodities between $4 million and $5 million a year, with most of the saving accruing on long-haul shipments. The "ceilings" are in line with a recommendation of the Royal Commission on Transportation, whose report was made public last month (*Railway Age*, March 26, page 42); if adopted, they would be the first commission recommendation to be put into effect. The ceilings would also go at least part way toward meeting the claim of western and maritime provincial governments that railway freight increases should not be applied in full to long-distance movement of basic commodities.

The rate increase sought in the April 23 petition would be in addition to a five per cent increase which the railroads applied for last December 21, and which is now under consideration by the Transport Board. The five per cent, estimated to yield $23 million per year, is designed to cover the cost of the 7-cents-per-hour wage increase obtained by non-operating railway employees as a result of last August's general strike. The additional 14 or 15 per cent now requested would cover, in addition to the cost of the 40-hour week, the cost of wage increases for operating employees and some smaller groups, and also higher costs of materials and supplies.

Along with the freight rate increases, the carriers plan to seek an increase in sleeping and parlor car fares which it is believed will yield them around $1 million a year.

Based on C.P. Needs

The present freight rate increase application is based in large part on statements showing that the Canadian Pacific—the line used by the Transport Board as a "yardstick" in setting rates —will have an estimated deficiency in revenues of $40,469,000 for the calendar year 1951. Of this deficiency, the railway association says, "$14,500,000 is the increase in cost of railway operations on an annual basis which will be experienced by Canadian Pacific as a result of the inauguration of the 40-hour week. The balance of the said deficiency amounting to $25,969,000 is attributable to other increases in costs of operation resulting principally from wage increases, increases in the prices of materials and in the surplus requirement." The two freight rate increases, and the increase in sleeping and parlor car fares, are designed to produce, together, enough added revenue for the C.P. to offset this estimated deficiency. Canadian National estimates were not detailed in the present application.

When the 40-hour week becomes effective on June 1, the railways will receive l.c.l. shipments on only five days a week, instead of six as at present. Carload shipments will not be affected.

Sees Railroad Gain From Decentralization

"One of the greatest opportunities for progress" is offered to American railroads by the increasing tendency of industry to leave congested areas for smaller communities, Carl Barker, assistant to the president of Shell Oil Company told members of the American Railway Development Association at St. Louis on April 18.

Speaking before the association's industrial section, Mr. Barker said the railroads "have a good chance to grow in stature as they improve their service," and to meet the challenge of decentralization, he suggested that the railroads would "do well to give more responsibility to their industrial agents — the men who handle liaison between the roads and other industries involved in relocation of plants." He said the railroads had made "exceptional progress" in providing new

equipment and introducing better operating methods, especially in the past decade. But he added that "such progress is expensive, and in providing funds to insure it, the railroads face problems similar to those in the oil industry." To meet the needs of the nation's oil consumption he explained, the oil industry must carry on a "costly and difficult research" for additional crude oil reserves financed by investors willing to support it. "In an economy such as ours, this job can be done only if the political and economic atmosphere is such that enough people are willing to invest enough money to pay for the search."

Other speakers on the three-day program were Col. Robert S. Henry, vice-president — public relations, of the Association of American Railroads, Dr. Allen A. Stockdale of the National Association of Manufacturers, and Allan B. Kline, president of the American Farm Bureau Federation. Major General Philip B. Fleming, under-secretary of commerce, Washington, D. C., was unable to speak because of ill health.

Officers elected for the coming year were H. W. Coffman, industrial agent, New York Central, Chicago (president); W. A. Kluender, forestry and agricultural agent, Chicago & North Western, St. Paul (1st vice-president); E. L. Beardsley, director of industrial development, Denver & Rio Grande Western, Denver (2nd vice-president), and J. G. Dugan, real estate and tax officer, Terminal Railroad Association of St. Louis, St. Louis (secretary-treasurer). The association plans to hold its next annual meeting in Quebec, Que. Approximately 150 members attended the St. Louis meeting.

Boston & Albany Now Completely Dieselized

After the April 16 Boston-to-Albany steam-powered run of the Boston & Albany's "New England Wolverine," the B.&A., a New York Central affiliate, switched completely to diesel power. The last trip of a steam locomotive on the B.&A. occurred 117 years to the month after the road's first steam locomotive, a wood-burner, left Boston for a run of about 7 miles to Newton.

The N.Y.C.'s single-track Putnam division, New York City to Brewster, N. Y., will be dieselized within a few years, according to present plans. Ultimately, a railroad spokesman said, the entire Central system will be dieselized. This goal is to be achieved by dieselizing one self-contained section of the line after another, rather than by placing each diesel unit into general service as it is delivered by the manufacturer.

Knudson Holds Meeting With Shipper Group

Defense Transport Administrator James K. Knudson consulted on April 24 with D.T.A.'s Shippers Advisory Committee. This is the first meeting of the committee with the administrator, who was joined in welcoming the shipper representatives and in keynoting the purpose of the meeting by Commissioner J. Monroe Johnson of the Interstate Commerce Commission.

The committee, composed of 35 industrial traffic and transportation executives and representatives of small business, considered a "lengthy agenda of timely subjects and left with the administrator valuable recommendations pertaining to present and prospective programs," a D.T.A. statement said.

It added that the committee will meet with the administrator periodically, at his call, "to give him the benefit of the shippers' viewpoint on measures conceived for the solution of transportation problems related to the defense emergency."

Dirty Cars Inflate Shortage—Kiley

"On our railroad alone it was necessary to clean some 290,000 freight cars during 1949. If you count an average of three days out-of-service time for each of these cars, you will find that 850,000 car days were lost simply because receivers of freight failed to remove debris," John P. Kiley, president of the Chicago, Milwaukee, St. Paul & Pacific recently told members of the Mid-West Shippers Advisory Board at a Chicago luncheon meeting sponsored jointly by the board and the Traffic Club of Chicago.

"Under certain conditions of heavy seasonal freight movements," Mr. Kiley said, "the time lost in cleaning can bring about an artificial car shortage. But I am pleased," he added "that efforts of shippers boards in cooperation with the railroads are producing splendid results in keeping cars in circulation through doing an excellent clean-up job." Mr. Kiley also told the board that bad order cars have been given much attention in the railroads' effort to combat the present shortage. "During the last year," he said, "the percentage of bad order cars to total ownership for all lines dropped from 8 per cent to 5.2 per cent, thus adding 45,000 serviceable cars to the national pool. On our own railroad, the percentage of bad order cars is down to 1.9 per cent."

A gradual improvement in car supply for the remainder of this year was predicted by R. E. Clark, manager of the Closed Car Section of the Car Service Division of the Association of American Railroads. However, he added that class A box cars would continue to be scarce because of grain movements plus military and export requirements. Lower-rated box cars will be in more plentiful supply, but he expects gondolas and flat cars will continue to be "tight."

A shipper can improve service by routing shipments by the originating carrier, the board's l.c.l. committee pointed out in its report. Such routes, the report stated, often involve fewer time-consuming transfers than do shipper-specified routes. A test of l.c.l shipments from one plant in Chicago to points within 400-mi. radius showed

FLOODWATERS—PLAGUE OF SPRINGTIME—have begun to show their power throughout the upper Mississippi valley. Here a workman struggles with sandbags to forestall further damage by the tributary Minnesota river to the Twin Cities-Omaha main line of the Chicago, St. Paul, Minneapolis & Omaha (Chicago & North Western System) near St. Peter, Minn. Coal dock operations of the Illinois Terminal and of the Alton & Southern in the St. Louis metropolitan area were hampered by high water, as was service to the St. Paul Union Stock Yards. As of April 19, however, no major services in the area had been seriously affected. Detours enabled the North Western to circumvent the above damage with little delay to either freight or passenger traffic

CAR SURPLUSES, SHORTAGES

Average daily freight car surpluses and shortages for the week ended April 21 were announced by the Association of American Railroads on April 26 as follows:

	Surplus	Shortage
Plain Box	0	6,538
Auto Box	53	139
Total Box	53	6,677
Gondola	96	2,701
Hopper	176	1,222
Covered Hopper	5	32
Stock	841	99
Flat	0	834
Refrigerator	5,024	0
Other	284	23
Total	6,479	11,588

the average in-transit time (not including delivery time) to be between 7 and 10 days. The committee pointed out that this performance is exceptionally "fast" when compared with shipments originating at smaller, outlying cities.

The day of the meeting was termed "Jim Brown's Day" to honor James L. Brown, recently retired superintendent of transportation for the Milwaukee, and a founding member of the Mid-West Board. Mr. Kiley's talk was keyed to "Jim Brown's favorite theme —the importance of clean cars."

Pullman Gets Authority To File Rate-Hike Tariffs

Division 2 of the Interstate Commerce Commission has cleared the way for filing by the Pullman Company of short-form tariffs carrying the proposed increase of 15 per cent in charges for space in Pullman-operated sleeping and parlor cars. The division's order of April 24 requires that the tariffs embody the usual 30-days' notice, and it stipulates that the authorization here involved does not constitute commission approval of the proposed increases which will be subject to suspension, upon complaint or upon the commission's own motion.

The order grants relief from the commission's tariff-publishing rules to the extent necessary to permit publication of the increases in "special master-tariff supplements" to Pullman rate tariffs already on file. This "irregular form of tariff publication" may continue until October 24, the order also provides.

Pullman's application also sought authority to publish the increases on less than 30-days' notice, but that request was denied, as noted above. As reported in *Railway Age* of April 23, page 37, the proposed increases are expected to yield additional gross revenues of $16,743,195 a year.

Freight Car Loadings

Loadings of revenue freight in the week ended April 21 totaled 809,520 cars, the Association of American Railroads announced on April 26. This was an increase of 31,531 cars, or 4.1 per cent, compared with the previous week; an increase of 86,832 cars, or 12.0 per cent, compared with the corresponding week last year; and an increase of 40,173 cars, or 5.2 per cent, compared with the equivalent 1949 week.

Loadings of revenue freight for the week ended April 14 totaled 777,989 cars; the summary for that week, as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, April 14

District	1951	1950	1949
Eastern	139,716	131,547	139,129
Allegheny	158,384	149,262	166,869
Pocahontas	60,936	61,512	65,479
Southern	133,440	126,636	119,089
Northwestern	106,816	71,239	109,418
Central Western	119,362	110,685	109,605
Southwestern	59,335	56,504	56,354
Total Western Districts	285,513	238,428	275,377
Total All Roads	777,989	707,385	765,943
Commodities:			
Grain and grain products	48,822	38,976	42,849
Livestock	7,978	8,257	8,946
Coal	135,304	152,970	157,710
Coke	14,859	14,261	14,894
Forest products	48,012	38,783	36,223
Ore	48,858	16,021	63,958
Merchandise l.c.l.	81,325	84,808	94,895
Miscellaneous	392,831	353,309	346,468
April 14	777,989	707,385	765,943
April 7	739,523	700,049	757,784
March 31	755,435	720,404	725,623
March 24	748,804	717,259	596,329
March 17	745,365	725,534	607,922
Cumulative total 15 weeks	11,011,718	9,531,439	10,480,038

In Canada.—Carloadings for the week ended April 14 totaled 79,737 cars, compared with 79,734 cars for the previous week, and 69,072 cars for the corresponding week last year, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
April 14, 1951	79,737	36,059
April 15, 1950	69,072	31,802
Cumulative totals for Canada:		
April 14, 1951	1,121,419	545,245
April 15, 1950	1,027,344	450,480

Truckers of Farm Products To Have Less Regulation

For-hire trucking of agricultural products and fish will have more freedom from regulation than at present, under two decisions recently handed down by the Interstate Commerce Commission.

The two cases are No. MC-C-968, in which the commission set out to clarify section 203(b)(6) of the Interstate Commerce Act by defining the phrase "agricultural commodities (not including manufactured products thereof)"; and No. MC-89207, in which it affirmed a previous decision defining the term "fish (including shell fish)."

In the first of these proceedings the commission was divided, 6 to 3, in attempting to draw a line between where a commodity ceases to be "agricultural" and becomes a "manufactured" product. This line in some cases placed commodities in the "agricultural" category when the commission's Division 5 or its Bureau of Motor Carriers had previously held the commodity to be "manufactured."

Among the previous findings which the commission reversed in whole or in part was that of Division 5 in the so-called Harwood case, the proceeding from which the whole investigation of section 203(b)(6) started. The commission instituted that investigation after receiving numerous petitions for reconsideration of Division 5's decision in the Harwood case.

That case, reopened and given further hearing as part of the investigation, is No. MC-107669, *Norman E. Harwood Contract Carrier Application*. Division 5 applied the so-called "channel of commerce" principle — that exemption from regulation ends when agricultural commodities "first enter the ordinary channels of commerce." It held the exemption privilege did not apply to fresh cut-up vegetables in cellophane bags and fresh vegetables, washed, cleaned, and packaged in cellophane bags or boxes.

The commission's new ruling says the exemption does apply to washed

Chicago Daily News photo

GIRLS ARE BACK!—In this case, working as passenger brakemen and ticket collectors on the Chicago North Shore & Milwaukee, where the impact of growing military traffic has "drained the barrel" of men suitable for railroad operating work. The North Shore's girls recently received widespread public attention through Miss Edna Wright (shown above), a Chicago Daily News reporter who "hired out" and then described her on-the-job experiences as a trainwoman in a series of illustrated newspaper articles. A North Shore Line spokesman told *Railway Age*: "It's really masculine work, but the girls are doing a grand job!"

and packaged vegetables, but upheld Division 5 with respect to vegetables that have been "chopped up." Incidentally, the commissi n denied the Harwood application after Harwood failed to show up at the further hearings in the case.

Under the commission's present findings, "agricultural commodities (not including manufactured products thereof)," to which the exemption applies, include:

"(1) fruits, berries, and vegetables which remain in their natural state, including those packaged in bags or other containers, but excluding those placed in hermetically sealed containers, those frozen or quick frozen, and those shelled, sliced, shredded, or chopped up; (2) fruits, berries, and vegetables dried naturally or artificially; (3) seeds, including inoculated seeds, but not seeds prepared for condiment use or those which have been deawned, scarified or otherwise treated for seeding purposes; (4) forage, hay, straw, corn and sorghum fodder, corn cobs, and stover; (5) (a) hops and castor beans, and (b) leaf tobacco, but excluding redried tobacco leaf; (6) raw peanuts, and other nuts, unshelled; (7) whole grains, namely, wheat, rye, corn, rice, oats, barley and sorghum grain, not including dehulled rice and oats, or pearled barley; (8) (a) cotton in bales or in the seed, (b) cottonseed and flaxseed, and (c) ramie fiber, flax fiber, and hemp fiber; (9) live poultry, namely, chickens, turkeys, ducks, geese, and guineas; (10) milk, cream, and skim milk, including that which has been pasteurized, standardized milk, homogenized milk and cream, vitamin "D" milk, and vitamin "D" skim milk; (11) wool and mohair, excluding cleaned and scoured wool and mohair; (12) eggs, including oiled eggs, but excluding: whole or shelled eggs, frozen or dried eggs, frozen or dried egg yolks, and frozen or dried egg albumin; (13) (a) trees which have been felled and those trimmed, cut to length, peeled or split, but not further processed, and (b) crude resin, maple sap, bark, leaves, Spanish moss, and greenery; (14) sugar cane, sugar beets, honey in the comb, and strained honey."

The extent to which the above findings liberalize present regulation is indicated by examples of commodities which Division 5 and the Bureau of Motor Carriers held to be "manufactured" products. Such commodities include pasteurized and homogenized milk, dried fruits, washed and packaged vegetables, and trees, including Christmas trees. I.C.C. Examiner Brooks, in a proposed report in the case, had recommended a still more liberal definition of "agricultural commodities." *(Railway Age*, August 6, 1949, page 59.)

Commissioners Rogers, Cross, and Johnson were the dissenters in this case, with Commissioners Mitchell and Knudson not p rticipating. Commissioner Lee, concurring in part with the majority opinion, said he felt the new rulings, "improperly narrow the scope of the exemption."

Commissioner Rogers' dissenting opinion said the majority decision has the effect "of enabling any person, including the professional truckman, to transport these commodities . . . . free from all regulatory provisions except the safety provisions of section 204." He said it would allow "anyone to become a professional truckman without proving a public need for the service," and added that "no constructive benefit" is conferred upon the farmer. He went on to say that rail carriers and certificated motor carriers will be adversely affected since they will be competing with carriers obliged to comply only with the safety provisions of the Act.

In the No. MC-89207 proceeding, the commission again concluded that the term "fish (including shell fish)" as used in section 203(b) (6) means "frozen, quick frozen, and unfrozen fish and shell fish in the various forms in which it is shipped, such as live fish, fish in the round, beheaded and gutted fish, filleted fish, beheaded shrimp, and oysters, clams, crabs, and lobsters, with or without shells, including crab meat and lobster meat, but excluding fish and shell fish in hermetically sealed containers and fish and shell fish which have been otherwise treated for preserving such as smoked, salted, pickled, spiced, corned, or kippered." *(Railway Age*, October 15, 1949, page 92.)

SECRETARY OF COMMERCE Charles Sawyer swears in Philip A. Hollar (left), as deputy under-secretary for transportation. Mr. Hollar, a vice-president of the American Car & Foundry Co., has been special assistant to the Defense Transport Administrator

Tennessee Adds Course in Freight Loss and Damage

A new course in claims and carrier liability is being added to the railway transportation curriculum at the University of Tennessee.

According to William Way, Jr., head of the University's transportation department, one part of the course will deal exclusively with claim prevention. It will cover such features as shipper-carrier cooperation, preparation of freight for shipment, containers, marks, shipping rules, education of carrier employees, physical handling of freight, records, and claim prevention programs of carriers.

Another portion of the course will deal with claims, reparations, and liability. Loss and damage, delay, and overcharge and undercharge will be discussed under types of freight claims. Sources of carrier liability in common law, statutory law, orders of regulatory commissions, and decisions of the courts will also be given thorough study. Various rights and procedures in settling claims will receive attention, as will rights and requirements of the shipper, supporting documents, statute of limitations, requirements of the carrier, interest payments, and channels of appeal.

"Star Routes" Will Replace Rail-Operated Mail Trucks

The Post Office Department has announced that it is going ahead with plants to substitute "Star Route" service on about 350 routes where mail now moves by railroad-operated trucks.

Field reports from the department's 15 divisions over the country are due April 30. These reports will include a layout of the proposed "Star Routes" and the service required to operate such routes.

Estimates by the department state that this change-over from railroad-operated mail truck routes to "Star Route" service may save the department up to $5,000,000 a year under the new railroad rate structure covering mail movements.

The railroads operate mail trucks in two cases—the so-called "parallel service," which permits through passenger train service without the necessity of slowing schedules to make mail stops, and in lieu of discontinued branch line service. These trucks carry the mail at regular rail space rates.

In almost every instance permission to operate trucks was given the railroads to aid rail operations while at the same time giving mail service, the department said. With that in mind, instructions have been issued to field officers of the department to examine each of the railroad-operated truck routes and make specific recommendations to the department for "Star Route" operation of these lines, it added.

Assistant Postmaster General John M. Redding said the department was

prepared to move on many of the proposed routes in mid-March, but that the railroads asked for an opportunity to submit offers before the routes were advertised for bids. He said the roads were given until April 15, but the department received only 12 proposals by the deadline date.

These proposals, according to Mr. Redding, included offers by some roads to waive part of the per-piece handling charges provided under the new rate structure, or to waive terminal charges on the rail-operated truck lines.

On April 25 the department announced that it had already decided to set up 14 truck routes in the St. Louis, Mo., area. The routes, ranging in distance from 24 miles to 234 miles, will be placed in operation July 1, and will result in total savings of about $83,000 a year, according to the department.

Coal Company Hits RR Rates and Car Shortage

Railroads are faced with ultimate loss of substantial coal traffic unless they begin to make a "more realistic approach to coal rate making," the Pittsburgh Consolidation Coal Company said in its recently released annual report for 1950. "We believe that the rail transportation of raw materials in huge quantities is very profitable to the railroads," the report added, "and we do not believe these profits should be used to make up for losses on passenger traffic, mail or miscellaneous freight. An amount of natural gas equal in fuel value to a ton of coal can be moved by pipeline for 33 cents per hundred miles. On the other hand, railroads are currently charging $2.74 (and they are seeking to raise this figure) to move a ton of coal from our southeastern Ohio properties to Cleveland, a distance of 110 miles."

During the last 5 years, the report continued, the company's operations have suffered "time and time again" from inadequate service by several railroads. "Just at the time when our customers needed more coal there were drastic car shortages which have forced our mines to operate on a severely curtailed schedule because coal generally cannot be stored at the mines. It is impossible to justify the large capital cost involved in a new mining operation unless there is reasonable assurance of an adequate car supply, nor can we hold men in the mines if their earnings are going to be regularly reduced by these car shortages and consequent short work periods."

Three More Roads Get Amortization Certificates

The Erie, the Seaboard Air Line, and the Southern Pacific are among transportation agencies which have recently received certificates of necessity authorizing accelerated amortization of facilities for tax purposes.

The certificates were issued by the Defense Production Administration upon recommendation of the Defense Transport Administration which released a list of companies receiving certificates, the kind and amount of each expansion project involved, and the percentage of that amount for which amortization in each case has been approved.

Two certificates were issued to the S.P., covering 80 per cent of a freight car construction program of $43,881,231. Seaboard received a certificate for 65 per cent of a $162,100 project for expansion of yard and track facilities. The Erie's certificate covers 65 per cent of that road's program for construction of diesel-electric locomotives and facilities, totaling $22,929,885.

Other companies receiving certificates, and amounts and percentages involved, are as follows:

Bay Cities Transportation Company, San Francisco, Cal., $256,000 (80 per cent), and $100,000 (70 per cent) for oil barge and tugboat construction; Jones & Laughlin Steel Corp, Pittsburgh, Pa., $720,175 (70 per cent) for towboat and steamer equipment, and $1,833,525 (80 per cent) for barge construction; National Steel Corporation, Pittsburgh, Pa., $6,500,000 (80 per cent) for cargo vessel construction; Hill City Towing Company, Vicksburg, Miss., $130,000 (70 per cent) for towboat construction; Mississippi Valley Barge Line Company, St. Louis, Mo., $900,000 (70 per cent) for towboat construction; Ashland Oil & Refining Co., Ashland, Ky., $2,275,000 (80 per cent) and $1,750,000 (70 per cent) for oil barge and towboat construction; and Jordon River Line, New Orleans, La., $1,065,000 (70 per cent) and $1,085,000 (80 per cent) for towboat and barge construction.

Bills in Congress

Several additional bills of interest to railroads have been introduced in Congress since the latest previous listing in *Railway Age* of April 2, page 80. Those bills and their sponsors are:

Introduced in Senate

S.1218, to make "certain changes in the laws applicable to regulatory agencies" (Johnson of Colorado).

S.1308, to amend the Railroad Retirement Act to permit retirement with full annuity after 30 years' service; to provide annuities thereunder equal to 50 per cent of salaries, based upon the five years of highest earnings (Langer of North Dakota).

S.1347, to amend the Railroad Retirement Act and the Carriers Taxing Act (Murray of Montana, for himself and 11 other senators).

S.1348, to amend the Railroad Retirement Act to eliminate the requirement that an adopted child of a deceased railroad employee whose death resulted from accident must have been adopted for 12 months prior to the deceased employee's death in order to quality for a child's annuity (Young of North Dakota).

S.1353, to amend the Railroad Retirement Act and the Railroad Unemployment Insurance Act (Murray of Montana, for himself and six other senators).

Introduced in House

H.R.3513, to provide for a 20 per cent increase in annuities and pensions payable under the Railroad Retirement Act (Miller of Maryland).

H.R.3635, to appropriate funds for construction of the Tennessee-Tombigbee inland waterway (Rankin of Mississippi).

H.R.3638, to prohibit any carrier subject to Part I of the Interstate Commerce Act, in transporting property between two points, from making a difference in its charges depending on the point of origin, direction, or destination (Rankin of Mississippi).

H.R.3669, to amend the Railroad Retirement Act and Carriers Taxing Act (Crosser of Ohio).

H.R.3678, to make "certain changes in laws applicable to regulatory agencies . . . so as to effectuate the recommendations . . . made by the [Hoover] Commission on Organization of the Executive Branch of the Government (Dawson of Illinois).

H.R.3712, to direct the Interstate Commerce Commission to make regulations requiring that freight cars be so equipped or painted that they can be readily seen at night (Gross of Iowa).

H.R.3755, to amend the Railroad Retirement Act and Railroad Unemployment Insurance Act (Crosser of Ohio).

H.R.3801, to amend the Railroad Re-

News Briefs . . .

. . . The Baltimore & Ohio cut by 25 minutes the running time of its St. Louis-New York "National Limited" when daylight saving time was inaugurated on April 29. The Pennsylvania's "Duquesne," between New York and Pittsburgh, now operates via the North Philadelphia station, and its schedule was cut by 25 minutes. The PRR's "New Englander," which operated from Pittsburgh to Broad Street station, Philadelphia, with New England sleeping cars, now operates through to New York, stopping at North Philadelphia. Now leaving Pittsburgh at 4 p.m., daylight saving time, 25 minutes were cut from its schedule to New York. The Pittsburgh-Washington, D.C., "Statesman" was advanced 55 minutes. The 9:30 p.m., d.s.t. train from New York to Washington was quickened by 45 minutes over last summer's schedule.

. . . Southern Pacific's "Shasta Daylight," coach streamliner operating between San Francisco, Cal., and Portland, Ore., carried its 500,000th passenger on April 10, just 21 months to the day after the service was inaugurated. Vice-president Claude E. Peterson says the twin "Shasta Daylights" have averaged about 790 passengers daily since they were introduced.

. . . Security holders of the Chicago, Indianapolis & Louisville have been "urged" by the management "to become both a patron and an ambassador for the Hoosier Line" in the road's new annual report. "Details of freight and passenger services will be gladly supplied to those who might be interested to receive them," the report points out, adding that "the traffic department will welcome opportunities to explain how it can facilitate your travels and shipments and those of your friends."

tirement Act to provide annuities to certain widows of railroad employees who died after the date of the enactment of the Railroad Retirement Act of 1935 and on or before the date of the enactment of the Railroad Retirement Act of 1937 (Bennett of Florida).

H.R.3806, to amend the Railroad Retirement Act (Van Zandt of Pennsylvania).

C. P. Richardson Takes State Rail Defense Post

C. P. Richardson, terminal engineer for the South Side Railway Terminal Committee (Chicago), has been appointed assistant deputy for railroads under Illinois State Civil Defense Director Lenox R. Lohr. In his new capacity, Mr. Richardson will handle problems in movement of essential rail traffic in the event of a war-time disaster within the state. Prior to accepting his position with the south side terminal committee, Mr. Richardson was engineer in charge of capital expenditures for the Chicago, Rock Island & Pacific.

The Illinois civil defense organization was the first of its kind fully to appraise and coordinate all transportation, communication and other essential services of a state for war disaster operations. Formation of the railroad section of this organization was described in *Railway Age* January 29, page 40.

Gross Revenue in March 15.8% Above Last Year

From preliminary reports of 81 Class I railroads, representing 81.5 per cent of total operating revenues, the Association of American Railroads has estimated that March gross amounted to $701,944,953, an increase of 15.8 per cent above the $605,939,817 reported for the same 1950 month. Estimated March freight revenue was $595,099,118, as compared with March 1950's $514,046,784, an increase of 15.8 per cent. Estimated passenger revenue was $57,161,450, as compared with $48,622,928, an increase of 17.6 per cent. All other revenue was up 14.8 per cent — $49,684,385 as compared with $43,270,105.

Car Shortages Continue Although Supply Is Up

Despite the fact that now is a period of the year when box car demands can normally be expected to be easier, shortages continue to exist, Arthur H. Gass, chairman of the Car Service Division, Association of American Railroads, reported in his latest issue of "The National Transportation Situation."

Reviewing the freight car shortage problem, Mr. Gass said demands continue "very heavy" for gondolas, with no early prospect of easing. The hopper situation is "relatively easy" now but is likely to tighten up within the next few weeks. Other types of cars continue to be in strong demand in many parts of the country.

Meanwhile, equipment statistics for March showed a continuation of the favorable trends of recent months, Mr. Gass reported. He said there was a 3,200 car increase in serviceable ownership during the month, reflecting an 1,800 gain in ownership and a 1,400 reduction in bad orders.

Roads continue to place orders for new cars at a rate exceeding new car deliveries. March orders totaled 11,271 cars, Mr. Gass said, while deliveries totaled 7,011. At the end of March there was a backlog of 158,619 cars on order. The C.S.D. chairman said it is "confidently expected" that the rate of production will continue to increase in future months until the goal of 10,000 cars per month is reached.

As to the matter of car shortages, Mr. Gass said box car requirements "can be expected to increase sharply" beginning with the winter wheat harvest in the Southwest. Box car loadings for the first 14 weeks this year already exceed those for the same period in 1950 or 1949.

"The westbound movement of empty box cars through the principal gateways continues to hold up well," Mr. Gass continued. He said this movement averaged 1,271 cars daily during March and 1,193 daily for the first 12 days in April. This movement, he added, "reflects the continuing excellent performance on the part of the eastern roads generally in meeting their quota requirements."

He noted that blocked grain elevators were down to 102 on April 16, compared with 1,275 a month earlier. There has been no grain reported on the ground alongside railroad rights-of-way since March 14, Mr. Gass said.

Commenting on the open top car situation, Mr. Gass said revenue coal loadings have been down recently because principal industries have generally favorable stocks on hand. Ore requirements are "soaring," however, and the movement from the Northwest Ranges this year "will probably exceed the previous record tonnage handled in 1942 when over 92 million tons were transported."

It is now contemplated that approximately 90 million tons of ore will be moved on the lakes this year, plus an all-rail movement which may exceed 3 million tons before the end of October, Mr. Gass said. As to the lake coal movement, he said the "grand total objective" is 60 million tons.

Export coal movement overseas has shown a marked increase during recent months, the C.S.D. chairman said. He said April export tonnage is expected to approximate two million tons, in addition to the heavy movements going to Canada. Exports of coal to the latter country during the first quarter of 1951 were up almost a million tons over the like period of 1950.

Average turn-around time of freight cars in March, as reported by Mr. Gass, was 15.58 days. The comparable figure for March, 1950 was 16.22 days. On the basis of reports from 760 cities in all 13 shipper board districts, cars detained beyond the free time of 48 hours averaged 14.79 per cent of those placed in March. This compared with 16.66 per cent for February, and 22.28 per cent in March 1950.

RAILWAY AGE WINS 1950 SAFETY COUNCIL AWARD

The National Safety Council this week announced the names of recipients of its non-competitive public interest awards for 1950. *Railway Age*, for the third consecutive year, received one of the awards, which are made annually to public information media "for exceptional service to safety." The 1950 awards went to 19 daily and five weekly newspapers, 63 radio and seven television stations, three radio networks, six general circulation and 24 specialized magazines, 20 advertisers, three outdoor advertising companies and one film producer.

The judges were Norman Damon, vice-president, Automotive Safety Foundation; Arthur F. Harre, general station manager and program director of radio station WJJD, Chicago; Wesley I. Nunn, coordinator of the "Stop Accidents" campaign of the Advertising Council and advertising manager, Standard Oil Company (Indiana); Dr. Kenneth E. Olson, dean of the Medill School of Journalism, Northwestern University; J. E. Ratner, editor of Better Homes & Gardens; Robert K. Richards, director of public affairs, National Association of Broadcasters; Arthur Stringer, National Association of Broadcasters; Miss Judith Waller, director of public affairs and education, central division, National Broadcasting Company, and Basil L. Walters, executive editor of Knight Newspapers, Inc.

Kansas Cement Rates

The Interstate Commerce has again found that intrastate rates on cement in Kansas, to which the Ex Parte 166 increases have not been added, cause unjust discrimination against interstate commerce. This latest finding was made after the commission held further hearings in the case at the request of the Corporation Commission of Kansas. The proceeding was docketed as No. 30035.

March Employment

Railroad employment increased 1.59 per cent — from 1,252,619 to 1,272,557 — from mid-February to mid-March, and the mid-March total was 10.89 per cent above that of March 1950, according to the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission.

The index of employment, based on the 1935-1949 average as 100, was 127.9 for March, compared with 125.8

for the previous month and 115.3 for March 1950.

March employment was above that of the previous month in all seven employee groups, with the increases ranging from 0.16 per cent for yardmasters, switch-tenders and hostlers, to 3.82 per cent for maintenance of way and structures employees.

As compared with March 1950, employment increased in all groups. The increases ranged fro— 18.21 per cent for the maintenance of way and structures group to 1.99 per cent for the group embracing executives, officers and staff assistants. Maintenance of equipment and stores and train and engine service groups were up 13.98 per cent and 10.67 per cent, respectively.

Hearings in Ex Parte 177

Dates for two of the regional hearings in Ex Parte No. 177—the rate-increase proposal of the Railway Express Agency—have been changed by the Interstate Commerce Commission. The hearing scheduled to be held in San Francisco, Cal., on May 8 has been changed to May 9, while that scheduled for Chicago on May 16 has been changed to May 21. The hearing scheduled for Jacksonville, Fla., on April 23 is unchanged. Examiner Samuel R. Diamondson will conduct the hearings. (See *Railway Age* of March 26, page 54.)

Report on Derailment At Woodbridge, N. J.

Reporting on its investigation of the February 6 derailment at Woodbridge, N. J., the Interstate Commerce Commission has recommended that the Pennsylvania install an automatic train-control system of the kind which the road has already announced its intention to install. Another recommendation is that the P.R.R. "provide adequate warning signs to indicate to enginemen the limits of temporary speed restriction areas on its line unless such restricted areas are protected by automatic train control."

As has been anticipated, the report's finding as to the cause of the accident is that it resulted from "excessive speed on a curve of a temporary track." Evidence to that effect was received by the commission at hearings in connection with its investigation of the accident. *(Railway Age*, February 19, page 34.) The derailment resulted in the death of 83 passengers and one train-service employee, and the injury of 345 passengers and five train-service employees.

Details of Accident

The commission's report was by Commissioner Patterson, and the investigation out of which it came was a formal proceeding, docketed as Ex Parte No. 178.

The temporary track involved was 2,767 ft. in length. It included a four-span timber trestle, 57 ft. 10 in. in length, installed to facilitate building of the so-called New Jersey turnpike, an express superhighway under construction between the northern and southern parts of the state. The trestle had been opened the day of the wreck, subject to a speed restriction of 25 m.p.h.

The 11-car train involved was No. 733, "The Broker," en route from Jersey City, N. J., to Bay Head Junction with a heavy load of homebound commuters. The time of the accident was 5:43 p.m.

Train Control Planned

In recommending that the P.R.R. follow through on its announced plans for installation of an automatic train-control system, the commission went on to say that the system should first be installed on the New York division. The proposed system, as the commission explained, "will automatically and continuously enforce a speed restriction of not exceeding 20 m.p.h. while proceeding through a block occupied by a preceding or opposing train" and "enforce, in like manner, a safe speed under temporary conditions similar to those which existed at Woodbridge when this accident occurred." The P.R.R. plans, embodying a $10 million project, were announced on March 2 by J. M. Symes, the road's vice-president — operation *(Railway Age*, March 12, page 93).

The commission's other recommendation, calling for warning signs to indicate temporary speed restrictions, was based on testimony of the derailed train's engineman. While he had an order fixing 25 m.p.h. as the speed limit on the temporary track, the engineman said he was looking for "warning signals to indicate the point at which the restriction became effective."

Such warning signals are used on the New York & Long Branch, the lines of which comprise part of the route over which "The Broker" operates. That part of the route on which the accident occurred, however, is a line of the P.R.R.'s New York division, and the operating plan there, as reported by the commission, is this: "When a general order can be issued sufficiently in advance of the time a speed restriction is to be effective, neither train orders nor a warning signal placed in approach of the point of restriction are required."

Pursuant to that operating plan, the P.R.R. slow order which the engineer had was a general order, issued January 29 and effective at 1:01 p.m. February 6. Between that time and the time of the accident, eight westbound trains passed over the temporary track.

The commission found that the speed of "The Broker" at the time of derailment was about 50 m.p.h. The normal speed limit for passenger trains in the territory is 65 m.p.h. The engineman testified that he had made brake applications while approaching the temporary track, and estimated that the train entered that track at a speed of "about 25 m.p.h."

Meanwhile, however, the conductor "testified that the train was moving at normal speed as it approached Woodbridge"; he "thought the speed was too high . . . for operation over the temporary track"; and he "was not aware of any reduction in speed and did not feel any application of the brakes." Summarizing the flagman's

TRIPPER PORTION of new automatic train stop device (outside each rail in center foreground), on Long Island is pointed out to William H. Draper, Jr., trustee, by General Manager Frank H. Simon. Tripper arms are in lowered position to permit passage of approaching train, which has clear signal. Open doors of steel signal cabinet (right background), show electric relays and other devices for operation of trippers. Nine trippers went into service on April 19 on elevated track between Nostrand avenue and East New York

testimony in like manner, the commission said that member of the train crew had also stated that he "did not notice any reduction in speed nor feel any application of the train brakes." The fireman was the employee killed in the wreck.

ORGANIZATIONS

Claim Agents to Meet at Biloxi

The Buena Vista Hotel, Biloxi, Miss., is the location for the 62nd annual meeting of the Association of Railway Claim Agents, which will be held May 2-4, inclusive, with K. A. Carney, chief claim agent of the Illinois Central, presiding.

The program includes paper on "Present Day Tendencies in Personal Injury Claims and Suits, and the Responsibility of the Claim and Law Departments in Meeting Conditions," by Lucius E. Burch, Jr., district attorney, I.C.; on "Responsibility of the Operating Department in Controlling Claim Costs, and the Desired Relationship Between Division Officers and Claim Agents," by S. F. Lynch, general manager, I.C.; on "Psychology of Claim Investigation and Adjustment," by C. E. Minto, claim agent, Canadian Pacific; on "Medical Management of Employee Injury Cases," by Dr. W. P. Bradburn, Sr., division surgeon, Southern and Southern Pacific; on "Cooperation with Law Enforcement Agencies in Investigation of Accidents," by Axel W. Hansen, claim agent, S.P.; and on "Cultivation of Friends," by R. G. Eirk, claim agent, Louisville & Nashville.

There will also be a quiz program on practical claims questions, conducted by E. N. Muldoon, general claims attorney, Chicago North Shore & Milwaukee; G. L. McConnell, chief claims agent, Canadian National; F. H. Hitchcock, general claim agent, Santa Fe, Coast Lines; R. O. Carter, assistant general claim agent, Missouri-Kansas-Texas, and C. F. Taliaferro, chief claim agent, Atlantic Coast Line.

The **Traffic Club of St. Louis** has announced that its annual dinner — normally held on the second Tuesday in January — will be held instead at the Jefferson Hotel on Tuesday, January 15, 1952.

Railroad Enthusiasts, Inc., will sponsor a steam powered trip on the Wharton & Northern, the Mount Hope Mineral and the High Bridge branch of the Central of New Jersey, on May 6.

Edward F. Lacey, executive secretary of the National Industrial Traffic League, will be banquet speaker for the **Industrial Traffic Conference** to be held May 17-18 at the University of Tennessee. Among the other speakers is Robert J. Bayer, editor of Traffic World. Participating in a panel discussion on coordination of domestic transportation will be: M. F. Redfern, vice-president in charge of traffic, Air Transport Association of America; Walter Mullady, first vice-president, American Trucking Associations; Gordon Locke, executive secretary, Committee for Pipe Lines; Chester Thompson, president, American Waterways Operators Association; and N. B. Correll, first vice-president, Southern Traffic League. Moderator for the discussion will be E. F. Hamm, Jr., president, Traffic Service Corporation.

The **Railway Association of Canada** has moved its offices from 437 St. James street, West, Montreal, Que., to 1520 Mountain street, Montreal 25.

SUPPLY TRADE

J. Douglas Dawson, formerly traffic manager of the abrasive division of the **Norton Company,** at Worcester, Mass., has been appointed general traffic manager, effective May 1, to succeed **Elmer B. Jones,** who is retiring after 22 years with the company. Mr. Dawson joined Norton

J. Douglas Dawson

in 1940 as assistant traffic manager, after 20 years experience in the transportation field. In 1945 he was appointed assistant superintendent at the Detroit warehouse and in the following year returned to Worcester as traffic manager of the abrasive division.

William L. Taylor, circulation manager of the *American Builder,* a **Simmons-Boardman Publishing Corporation** publication, has been appointed also circulation manager of that company's transportation papers: *Railway Age, Railway Mechanical & Electrical Engineer, Railway Engineering & Maintenance,* and *Railway Signaling & Communications.* **Robert G. Lewis,** assistant to the president of Simmons-Boardman, has been appointed also director of subscription sales, transportation papers.

Charles C. Sons (above) has been appointed acting eastern service manager of the Cummins Engine Company, with headquarters at Columbus, Ind., and Dillard B. Davis (below), formerly eastern service manager, has been appointed regional service representative in the Central region, with headquarters at Chicago. Mr. Sons formerly was field engineer at the Hibbing branch of the Cummins Diesel Sales Corporation, at St. Paul. Mr. Davis succeeds Lloyd Kerber, who has resigned to accept the position of general service manager for the Cummins Diesel Sales Corporation of Missouri, at St. Louis

Roy A. Hunt, president of the **Aluminum Company of America** since 1928, has been elected chairman of the executive committee, and **I. W. Wilson,** senior vice-president, has been elected president. **Leon E. Hickman,** a senior partner of the law firm of Smith, Buchanan & Ingersoll, of Pittsburgh, has been elected a vice-president and general counsel of Alcoa. **Arthur V. Davis** will continue as chairman of the board.

The **Nevada Scheelite Company,** with mines and mill near Rawhide, Nev., is being transferred by sale of stock to **Kennametal Inc.,** at Latrobe, Pa. **A. R. McGuire,** mining en-

gineer of Fresno, Cal., will become president of Nevada Scheelite and **Donald C. McKenna,** vice-president of Kennametal, will become secretary and treasurer of Nevada Scheelite, when legal formalities are completed.

Eugene C. Bauer has been elected president of **Poor & Co.** and chairman of the board of both the **Kensington Steel Company,** Chicago, and the **Pioneer Engineering Works** (Poor & Co. subsidiary), Minneapolis, Minn. As president of Poor & Co., Mr. Bauer succeeds **Philip W. Moore,** who has retired. Mr. Bauer was formerly first vice-president of Poor & Co. and president of Kensington Steel Company. **Max K. Ruppert,** president of the **P. & M. Company,** the **Maintenance of Equipment Company** and vice-president of Poor & Co., succeeds Mr. Bauer as first vice-president. Mr. Ruppert was also made a member of the company's executive committee.

Educated in the Chicago public

Eugene C. Bauer

schools, Mr. Bauer subsequently attended business college and completed courses with the International Correspondence School. He began his business career in 1906 in a Chicago law office and two years later entered the railway supply field when he became employed by a manufacturer of railway equipment and brake shoes, transferring to a subsidiary manufacturing austenitic manganese steel in 1911. After holding various positions in 1923 he became one of the organizers of the Inland Engineering Company, which firm's name was changed to the Kensington Steel Company in 1926. In 1945 control of the Kensington Steel Company was vested with Poor & Co., which transaction resulted in Mr. Bauer's becoming a director and vice-president of Poor & Co. In April 1950 he was elected first vice-president, continuing also as president of Kensington Steel Company.

Herbert F. Gunnison has been appointed sales representative in the Louisville area by the **Signode Steel Strapping Company,** Chicago. His territory includes most of Kentucky and part of southern Indiana. Mr. Gunnison formerly was salesman for the Louisville Farm Implement Company. **C. A. Carter** has joined Signode as representative of the Seattle office, covering Washington, Montana, and northern Idaho. Mr. Carter formerly was with the Canadian Steel Strapping Company, a Signode subsidiary at Vancouver. In his new position he will work under direction of **Glenn E. Pollard,** manager of the Pacific Coast district, at San Francisco.

A. A. Wilson, formerly sales representative for the **Graybar Electric Company,** has been appointed manager of the Asheville, N. C., branch, to replace **H. H. Hix,** who has been granted an indefinite leave of absence due to ill health.

The **Standard Stoker Company** has changed its name to the **Read Standard Corporation.** No change in ownership, management or personnel has been made.

M. J. Donovan, formerly assistant to the president of the **Franklin Railway Supply Company,** has been appointed vice-president, in charge of merchandising of new products, and **William T. Lane,** formerly western sales manager, has been appointed vice-president, in charge of western sales including the company's industrial products, with headquarters at Tulsa.

OBITUARY

A. P. Ross, vice-president of the Michigan Power Shovel Company, Benton Harbor, Mich., died on March 30.

CAR SERVICE

West's Car Supply Allows Cancellation of Orders

Because of the improvement in the supply of freight cars in the West, orders for the fleet movement of box cars to Western railroads regardless of ownership was scheduled to be cancelled on April 30. Arthur H. Gass, chairman of the Car Service Division, Association of American Railroads, announced this on April 25.

Mr. Gass said that these orders, which have been in effect since February 19, were required to relocate box cars because of an unbalance of cars between the East and the West caused by the railroad strikes in late January and early February. While these orders were in effect, the Western railroads received 80,000 empty cars in addition to the loaded cars entering the West, he stated.

In the high moisture content grain area in the Northwest, there are no blocked interior elevators and the grain movement is currently being handled without a car shortage, Mr. Gass declared. Despite a shortage of cars in the first 15 weeks of 1951, loadings of grain and grain products have exceeded those in any comparable period in history, except for 1947 when three per cent more of these commodities were loaded, he added.

Mr. Gass also announced that two new orders were being issued, effective May 1, calling for the return to principal Western grain loading railroads of cars belonging to those lines. These orders, he explained, have the threefold purpose of making available more cars to those lines confronted with the heavy movement of government grain on which loans will mature on May 1, increasing the supply of cars available for the movement of the new winter wheat harvest in the Southwest starting in mid-May and making available additional box cars for other commodities.

In the first 15 weeks of this year, the railroads handled 11 per cent more freight in box cars than in the same period last year and five and a half per cent more than in 1949, Mr. Gass said. Much of this increase was due to the movement of freight that had backed up during the railroad strike periods, he stated.

I.C.C. Order Requires Heavy Loading of Lumber

I.C.C. Service Order No. 876, effective from May 7 until October 15 unless otherwise modified, requires "heavy" loading of lumber and lumber products. The order prohibits railroads from handling shipments of lumber unless they are loaded to the marked capacity of the car or to "full visible capacity, but not to exceed 90 per cent load limit."

As to stop-off cars, the order requires that they be loaded to at least 50 per cent of the marked capacity at the first loading point. The order has provisions for the issuance of permits authorizing movement of lumber shipments which do not meet the loading requirements. The permit agent is Howard S. Kline, chief of the Car Utilization Section of the commission's Bureau of Service.

Third Revised I.C.C. Service Order No. 95 will supplant Second Revised Service Order No. 95, effective May 1. The order appoints D. W. Benton, assistant to chairman, Car Service Division, Association of American Railroads, as I.C.C. agent for the purpose of keeping the commission informed as to the refrigerator car situation. Mr. Benton's headquarters are at Chicago. The revised order is scheduled to expire April 30, 1952.

Revised I.C.C. Service Order No. 856 has been modified by Amendment No. 4 which set back the expiration date to July 1. The order requires that Saturdays and Sundays occurring after the expiration of free time shall be included in computing demurrage on all freight cars.

I.C.C. Service Order No. 865, which

imposes super-demurrage charges running up to $20 a day, has been modified by Amendment No. 8 which exempts refrigerator cars for the period from May 1 until June 1.

I.C.C. Service Order No. 869 has been modified by Amendment No. 3 which set back the expiration date to October 31. The order prohibits the use of RS type refrigerator cars, which are suitable for the transportation of perishable freight, for loading with commodities other than perishables—except commodities loaded in reefers under provisions of tariffs authorizing the substitution of reefers for box cars.

EQUIPMENT AND SUPPLIES

FREIGHT CARS

The **Northern Pacific** has ordered 250 70-ton gondola cars from the American Car & Foundry Co. Inquiry for these cars was reported in *Railway Age* February 26, page 51.

PASSENGER CARS

The **Union Pacific** will purchase 50 passenger-train cars, including 16 sleeping, 14 chair, 10 baggage, 6 dining, 2 mail-baggage and 2 baggage-dormitory cars.

LOCOMOTIVES

C. & O. Orders 107 Diesel Units Costing $17,687,000

The Chesapeake & Ohio has ordered 107 diesel-electric locomotive units costing approximately $17,687,000. Included in the order are 12 2-unit 4,500-hp. and 3 1-unit 2,250-hp. passenger locomotives (deliveries of which are scheduled to begin in July and be completed in November), and 21 1,200-hp. switching units (scheduled for delivery in October and November), all to be built by the Electro-Motive Division of General Motors Corporation; and 59 1,500-hp. road-switching units to be constructed by General Motors Diesel, Ltd., for delivery scheduled to start next October and be completed in May 1952.

When diesel units now on order are in service, Walter J. Tuohy, C.&O. president, told stockholders at the recent annual meeting in Richmond, Va., the Pere Marquette district will be 100 per cent dieselized for all services, while the Chesapeake district will be dieselized 60 per cent for switching, 80 per cent for passenger service and 11 per cent for freight service. "We have already dieselized or ordered diesels only for those places and services where the savings without question justify the expenditures," he added. "We have made no diesel purchase where the savings will not return the capital investment in five years or less."

The **Atlanta & West Point** has ordered one 1,200-hp. diesel-electric locomotive switching unit from the Baldwin-Lima-Hamilton Corporation at a cost of $102,500. Delivery is scheduled for next August.

The **Chicago, Burlington & Quincy** has ordered 23 1,500-hp. diesel-electric locomotive road-switching units from the Electro-Motive Division of General Motors Corporation. Delivery is scheduled for later this year.

The **Gulf, Mobile & Ohio** has ordered three 1,600-hp. diesel-electric locomotive road-switching units from the American Locomotive-General Electric Companies at an approximate cost of $426,000. Delivery is scheduled for next September.

The **Lake Superior & Ishpeming** has ordered three 1,000-hp. diesel-electric locomotive switching units from the American Locomotive-General Electric Companies at a cost of $348,000. Delivery is scheduled for next November or December.

The **Minneapolis & St. Louis** has ordered three 1,000-hp. diesel-electric locomotive road-switching units from the American Locomotive-General Electric Companies at an approximate cost of $342,000. Delivery is scheduled for next October.

The **Missouri-Illinois** has ordered one 1,600-hp. diesel-electric locomotive road-switching unit from the American Locomotive-General Electric Companies for delivery next October.

The **St. Johnsbury & Lamoille County** has ordered one 600-hp. diesel-electric locomotive switching unit from the General Electric Company at a cost of $78,000.

The **Union Pacific** will purchase 22 diesel-electric locomotive units, including eight 2,400-hp. helper locomotives (each consisting of two permanently connected 1,200-hp. units), and six 1,600-hp. road-switchers.

The **United States Steel Corporation** has ordered 16 1,200-hp. diesel-electric switching locomotives, eight each from Baldwin-Lima-Hamilton Corporation and Fairbanks, Morse & Co. Delivery is scheduled to begin in July.

The **Wabash** has placed orders for 34 diesel-electric locomotive units. The Electro-Motive Division of General Motors Corporation will build one 2,250-hp. passenger, six 2-unit 3,000-hp. freight, ten 1,500-hp. road-switching and five 1,200-hp. switching locomotives. General Motors Diesel, Ltd., will construct two 2-unit 3,000-hp. freight, one 1,500-hp. road-switching and one 800-hp. switching locomotives. Delivery is scheduled for 1952.

SIGNALING

The **Chesapeake & Ohio** has ordered from the Union Switch & Signal Co. materials to install a traffic control system, including control of four interlockings, on 30 miles of double track between St. Albans, W. Va., and Barboursville. In addition to the 7½-ft. style C control machine, which will be installed in the St. Albans yard office, the order includes style R color-light signals, style M-23 dual-control electric switch machines, style SL-21A electric switch locks, relays, rectifiers, housings and switch circuit controllers. Field installation will be done by railroad forces.

COMMUNICATIONS

The **National of Mexico** has ordered from Bendix Radio Division, through the Mexican distributing firm of Automotriz O'Farrell and the Bendix International Division, type MRT-5 two-way radio equipment, to expedite the movement of trains and freight in the vicinity of Mexico City. This first railroad radio communications system to be installed on a permanent basis in Mexico will include the equipping of yard offices and 10 locomotives. In addition, four portable radiotelephones have been ordered for use by car inspectors and general utility service.

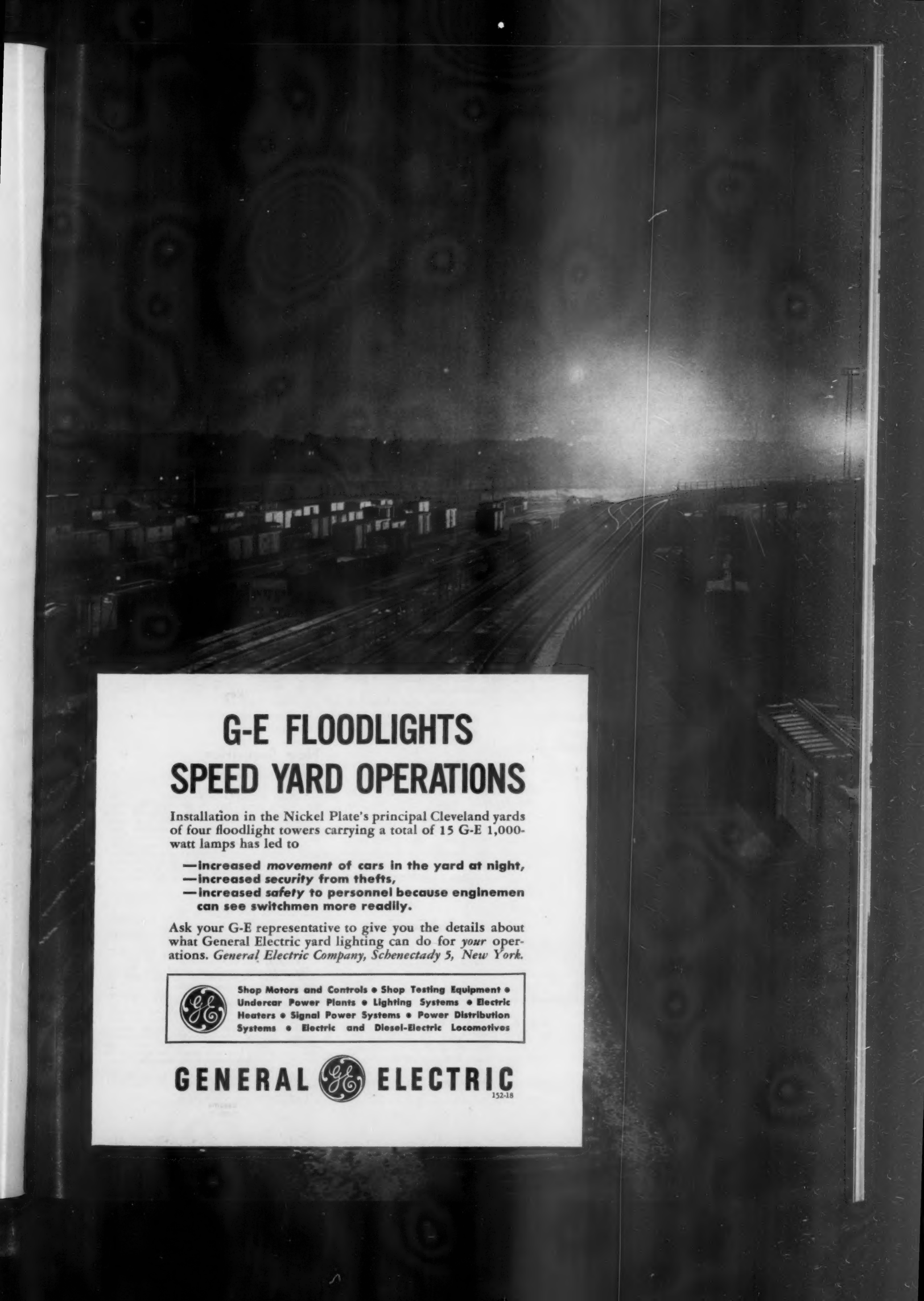
CONSTRUCTION

N.Y.C. Plans New Bridge Over Harlem River

The New York Central will begin construction about May 1 of a new four-track, vertical-lift bridge over the Harlem river in New York. The new structure will carry all Central and New Haven trains using Grand Central Terminal. It will be constructed immediately to the west of, and then replace, the present swing bridge between Manhattan and the Bronx.

The multi-million dollar job, on the Central's planning boards for years, will be progressed in two stages, with completion scheduled for 1954. The first step, sinking five concrete piers into the riverbed, will take about 18 months, and the second phase, scheduled to begin in the fall of 1952, will be construction of the remainder of the substructure, abutments and superstructure, and removal of the present bridge.

The new bridge will open and close in four minutes, less than one-half the time required by the present bridge. It will provide a single 225-ft. channel for vessels, compared with the present two 100-ft. channels. The new structure and its approaches will be 2,227 feet long. The center, or lift, span is to be 340 feet long and will be activated electrically with the aid of steel-encased concrete counterweights



G-E FLOODLIGHTS SPEED YARD OPERATIONS

Installation in the Nickel Plate's principal Cleveland yards of four floodlight towers carrying a total of 15 G-E 1,000-watt lamps has led to

- **—increased *movement* of cars in the yard at night,**
- **—increased *security* from thefts,**
- **—increased *safety* to personnel because enginemen can see switchmen more readily.**

Ask your G-E representative to give you the details about what General Electric yard lighting can do for *your* operations. *General Electric Company, Schenectady 5, New York.*

Shop Motors and Controls • Shop Testing Equipment • Undercar Power Plants • Lighting Systems • Electric Heaters • Signal Power Systems • Power Distribution Systems • Electric and Diesel-Electric Locomotives

GENERAL ELECTRIC

152-18

AN ARCHITECT'S DRAWING (right), of the N.Y.C.'s proposed new vertical lift bridge over the Harlem river in New York City. The new structure will replace the present swing bridge (above), built in 1897, which is the fourth Harlem River railroad bridge at that point. Two wooden bridges were constructed originally, in 1841 and 1856, and the third structure, a double-track iron span, was erected in 1871

to 135 feet above water level. There will be twin units of two tracks, each of which could be moved independently, if necessary. Although working drawings have not been completed, it is expected that about 15,000 tons of steel will be needed for the superstructure and about 70,000 bbl. of cement for piers and abutments. The two main concrete piers supporting the lift span will be 23 feet wide and 101 feet long, and will be sunk 81 feet below water level.

Chicago, Rock Island & Pacific.—Currently in progress are two line changes at Butterfield, Ark., and Rockport where necessary grading and culvert work is being undertaken by the McGeorge Contracting Company, Pine Bluff, at an estimated cost of $34,000. Additional bank protection along the Republican river at Clifton, Kan., is being installed by the Kellner Jetties Company of Topeka at an estimated cost of $21,000.

Colorado & Wyoming.—Division 4 of the I.C.C. has authorized this road to construct a 9.5-mi. extension of its Southern division main line from Weston, Colo., to a point to be known as Allen Mine. The line will enable the road to serve a coal mine being opened by its parent company, the Colorado Fuel & Iron Corp. Total cost of building the line is estimated at $1,320,000, which will be paid from current assets and earnings. Division 4's report noted that the road expects the coal business over this line to produce net railway operating income of $752,000 a year after the first five years.

FINANCIAL

Bangor & Aroostook.—*New Director.*—David Daigle has been elected to this road's board of directors. At the annual stockholders' meeting in Bangor, Me., on April 17, a proposal was adopted to amend the bylaws so that representation of one-third instead of one-half in voting power of the outstanding capital stock shall constitute a quorum at meetings.

Chicago, Rock Island & Pacific.—*New Director.*—John B. Faegre was elected to membership at the annual meeting of the board of directors at Chicago on April 19. Mr. Faegre is president of the Minnesota-Ontario Paper Company and a member of the legal firm of Faegre & Benson, of Minneapolis. He succeeds Dudley Swim of Pebble Beach, Cal., who has resigned.

New York, Chicago & St. Louis. — *Five-for-One Stock Split.* — The I.C.C. has authorized A. G. Berse of New York, a preferred stockholder, to intervene in the case in which this road seeks authority to make a five-for-one split of its common stock. *(Railway Age,* April 9, page 74.) Mr. Berse indicated he would oppose the changes.

Investment Publications

[The surveys listed herein are, for the most part, prepared by financial houses for the information of their customers. Knowing that many such surveys contain valuable information, *Railway Age* lists them as a service to its readers, but assumes no responsibility for facts or opinions which they may contain bearing upon the attractiveness of specific securities.]

Baker, Weeks & Harden, One Wall st., New York 5.

Annual Review: Basic Statistics of Individual Railroads. April 5.

Fahnestock & Co., 65 Broadway, New York 6.

Erie Railroad Co. Weekly Review, April 9.

H. Hentz & Co., 60 Beaver st., New York 4.

An Analysis of Westinghouse Electric Corp. April 2.

Northern Trust Company, S. La Salle & W. Monroe sts., Chicago 3.

A Review of the Railway Equipment Industry. March.

Vilas & Hickey, 49 Wall st., New York 5.

Comparison of Railroad Income Bonds. April 12.

Great Northern Railway. April 16.

Railroad Equities. April 6.

J. R. Williston & Co., 115 Broadway, New York 6.

Current Position of Railroad Securities. April 3.

New Securities

Applications have been filed with the I.C.C. by:

CARBON COUNTY.—To issue and deliver to the United States Steel Corporation $995,000, par value, of additional capital stock and two promissory notes totaling $1,620,993. The stock and notes represent funds advanced to the road from time to time by the corporation.

DENVER & RIO GRANDE WESTERN.—To assume liability for $2,670,000 of series Q equipment trust certificates to finance in part five diesel-electric locomotives and 525 freight cars. Cost of the new equipment is estimated at $3,587,547.

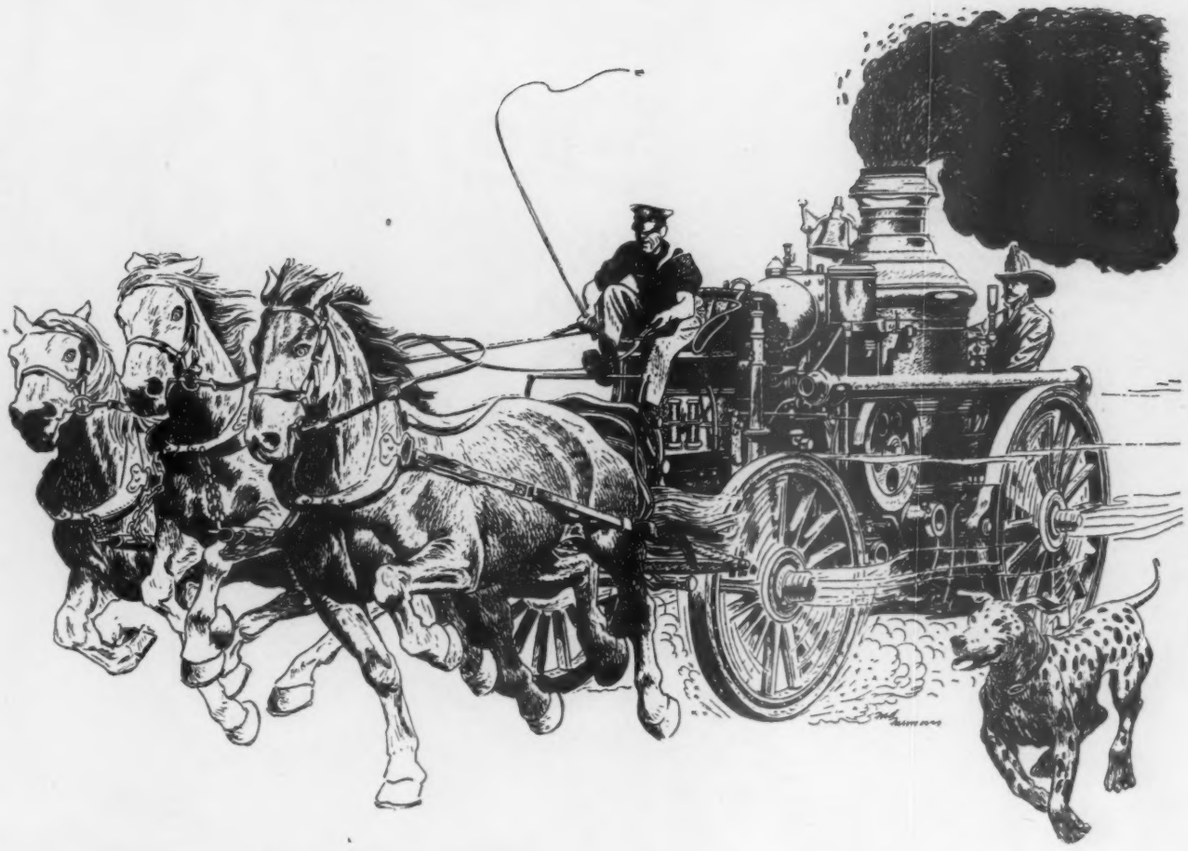
Description and Builder	Estimated Unit Cost
5 1,600-hp. road-switching locomotives (American Locomotive Company)	$160,439.00
25 70-ton covered hopper cars (American Car & Foundry Co.)	6,839.10
500 70-ton open-top triple hopper cars (Pressed Steel Car Company	5,228.75

The certificates would be dated June 1, and would mature in 30 semiannual installments of $89,000 each, beginning December 1, 1951. They would be sold by competitive bidding, with the bids to set the interest rate.

Long Island.—To issue $6,000,000 of trustee's certificates of indebtedness to finance the purchase and installation of safety devices recommended by the commission and "other public bodies." The certificates, bearing interest at the rate of 3½ per cent, would be payable in 16 equal quarterly installments, beginning October 1, 1952.

MONTOUR.—To assume liability for $1,000,000 of series D equipment trust bonds, to finance in

(Continued on page 55)



IN THE DAYS WHEN FIRE-FIGHTING EQUIPMENT WAS DRAWN BY HORSES, NOT MUCH THOUGHT WAS GIVEN TO BOILER WATER CARRYOVER.

But, as fire-fighting equipment improved, progress was also made in locomotive boilers, always with the thought of efficiency, which must take into account the moisture content of the steam generated—for wet steam delivered to the superheater means lower temperature steam to the engine where work is performed and efficiency counts.

Regardless of design, the efficiency of any locomotive boiler and engine performance can be greatly improved by separation of the moisture in the steam leaving the boiler.

Research has dug deeply into the facts about Boiler Carryover and the results are contained in a paper that was presented before the American Society of Mechanical Engineers – *copy if you wish.*

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Division of
COMBUSTION ENGINEERING-SUPERHEATER, INC.
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HOW?...by the ELESCO STEAM DRYER SYSTEM

Superheaters • Superheater Pyrometers • Exhaust Steam Injectors • Steam Dryers • Feedwater Heaters • Steam Generators • Oil Separators • American Throttles

TAILORED SERVICE

wins tonnage for the Lehigh Valley

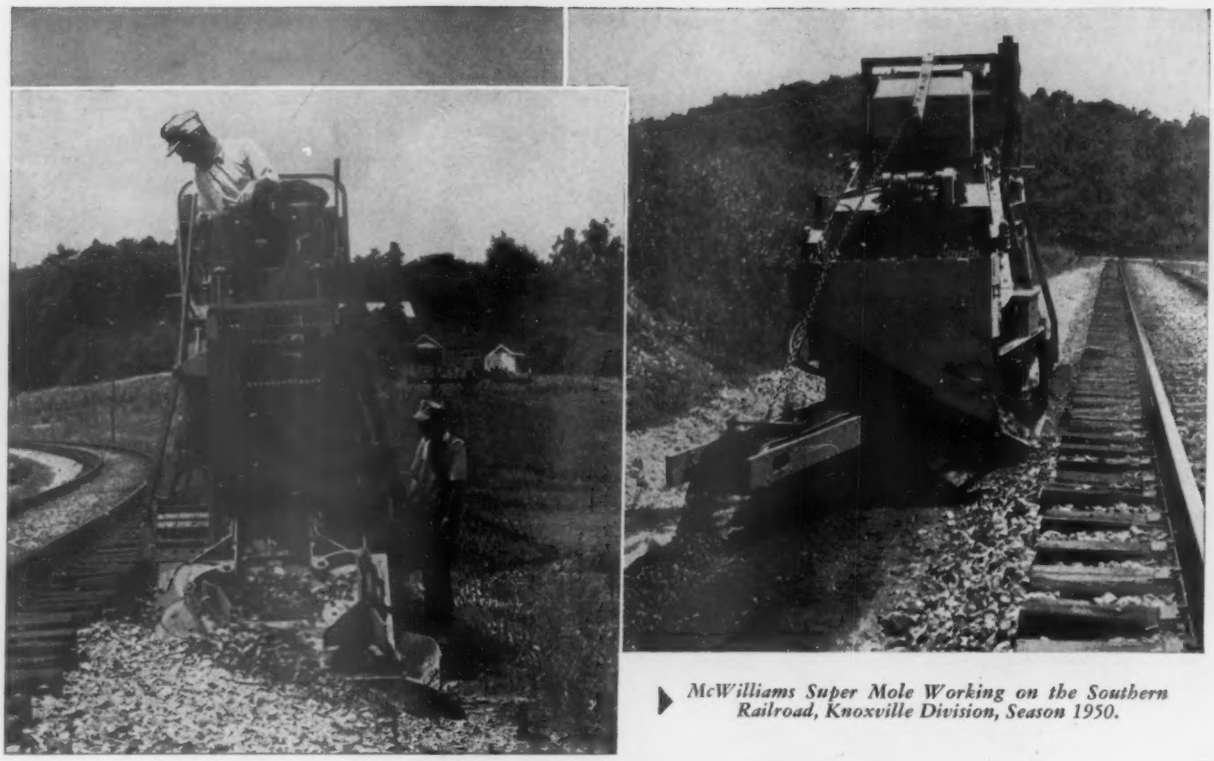
Keeping down the shipping bills and providing faster service is the double-barreled achievement that is winning new customers for the Lehigh Valley.

"Custom-made" scheduling, with close co-operation between the railroad and its shippers, is the key to the success of this new service. The resulting loading schedule allows exceptionally long hauls before breaking bulk, reducing the cost of transfer handling and cutting loss and damage potential. And, with Alco-GE freight diesel-electrics on the job new and faster schedules are easily maintained.

The fast, dependable service provided by the Lehigh Valley is a prime example of the way progressive railroads are meeting tough competition. Alco-GE locomotives can help you provide this service to *your* customers.

AMERICAN LOCOMOTIVE
and
GENERAL ELECTRIC

113-259



McWilliams Super Mole Working on the Southern Railroad, Knoxville Division, Season 1950.

Now You Can Clean Track Shoulder at 1,500 Feet Per Hour at Less Than 3½ Cents Per Foot

You get new cleaning economy with the McWilliams Super Mole because now with only one operator and one helper you get fast, off-track cleaning on a mobile unit. The Super Mole excavates and cleans at speeds ranging from 800 ft. to 4,000 ft. per hour—at a cost of less than 3½ cents per foot. It is crawler mounted to give ease of crossing road beds, highways and maneuvering around obstructions. To learn more about the economy of road bed maintenance with the Super Mole write to Railway Maintenance Corporation, P.O. Box 1888, Pittsburgh, Pa.

SPECIFICATIONS

5 traveling speeds—1.5 to 5.4 M.P.H.

5 excavating and cleaning speeds—800 to 4,000 ft. per hr.

Length—20′ 0″

Height—8′ 0″

Digging Width—5′ 0″

Width over treads—4′ 4″

Width of tread—12″

Engine—4-cycle diesel

Governed speed—1450 R.P.M.

Total weight—16,000 lbs.

Railway Maintenance Corporation

Designers and Manufacturers of: Moles; Super Moles; McWilliams Crib Cleaners; HR Track Raiser and Air Tampers; McWilliams Multiple Tool Air Tamper; R.M.C. Rail Joint Packing.

(Continued from page 50)

part 300 50-ton hopper cars to be purchased from the Greenville Steel Car Company. Cost of the cars is estimated at $4,515 each, with the total being $1,354,500. The bonds would be dated June 1, and would mature in 10 annual installments of $100,000 each, beginning June 1, 1952. They would be sold by competitive bids, with the interest rate to be set by such bids.

Security Price Averages

	Apr. 24	Last Week	Last Year
Average price of 20 representative railway stocks	55.37	56.68	41.76
Average price of 20 representative railway bonds	95.25	95.53	92.01

Dividends Declared

Bangor & Aroostook.—$5 preferred, $1.25, quarterly, payable July 1 to holders of record June 5.

Little Miami.—original, $1.10, payable June 9, September 10 and December 10 to holders of record May 22, August 20 and November 19; $1.00, payable March 10, 1952, to holders of record February 18, 1952.

RAILWAY OFFICERS

EXECUTIVE

J. C. Gardiner, Jr., general manager of the BANGOR & AROOSTOOK, has been appointed also vice-president with headquarters as before at Bangor, Me., succeeding **Frank H. Daggett,** retired. **Gordon D. Briggs,** general counsel and clerk of the corporation, has been named also vice-president, succeeding **Henry J. Hart,** retired. Photographs and biographies of Messrs. Gardiner and Briggs were published in *Railway Age*, February 5, 1951, and December 30, 1950, respectively.

Frank H. Daggett

Mr. Daggett was born at Hodgdon, Me., on December 8, 1880, and entered railroad service in 1897 as telegraph operator with the B.&A. He subsequently served as operator, station agent, train dispatcher, chief train dispatcher, superintendent car service and division superintendent. In October 1947 Mr. Daggett was appointed general manager of the road and in June 1949 he became also vice-president. On January 1 he relinquished the duties of general manager but remained as vice-president in an advisory capacity until April 17, when he retired.

Henry J. Hart

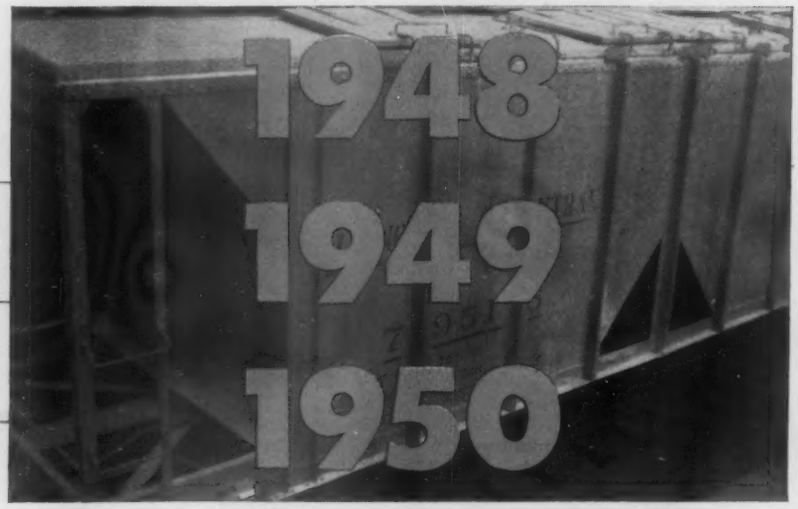
Mr. Hart was born at Lynn, Mass., on January 25, 1880, and attended Brown University (A.B. 1902) and

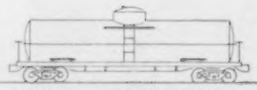
ANNUAL REPORTS

Railroad		Operating Revenues	Operating Expenses	Fixed Charges	Net Income	Current Assets*	Current Liabilities*	Long Term Debt*
Ann Arbor	1950	$9,400,460	$6,570,304	$229,828	$1,249,853	$5,039,793	$1,685,809	$7,436,949
	1949	7,642,142	6,333,128	226,722	292,419	3,792,063	1,141,536	5,456,156
Atlanta & St. Andrews Bay	1950	3,021,346	1,448,597	47,485	622,883	1,873,412	998,512	466,000
	1949	2,171,914	1,224,738	51,322	396,525	1,143,631	641,396	712,000
Boston & Maine	1950	86,580,762	66,816,462	3,136,288	4,639,038	33,074,941	18,918,203	97,118,359
	1949	82,238,980	67,091,572	3,394,756	2,442,959	28,378,393	16,313,072	99,919,002
Canadian National	1950	553,831,581	493,997,079	47,421,983	3,261,235d	156,618,867	96,236,916	659,030,241
	1949	500,723,386	478,501,660	48,631,896	42,043,026d	139,009,554	88,620,210	624,865,919
Canadian Pacific	1950	378,576,688	340,556,331	13,389,610	47,867,011	161,803,381	72,246,992	85,709,000
	1949	363,252,094	342,620,125	14,543,817	29,724,805	134,376,594	45,093,562	79,373,000
Chicago & Eastern Illinois	1950	30,577,220	21,944,993	896,492	3,019,310	10,362,602	6,797,142	36,940,255
	1949	27,812,087	23,622,071	827,000	364,422	7,191,246	5,541,739	30,167,127
Chicago, Indianapolis & Louisville	1950	19,752,299	14,743,653	255,085	1,897,798	9,358,802	5,205,905	21,717,796
	1949	17,786,942	14,536,998	266,298	975,303	7,306,603	3,829,202	22,417,796
Chicago, Milwaukee, St. Paul & Pacific	1950	255,421,649	199,650,956	4,218,431	15,171,193	110,727,541	61,016,457	222,689,413
	1949	238,021,260	202,111,827	4,176,475	4,476,982	102,176,398	45,009,142	228,859,615
Delaware & Hudson	1950	54,834,836	42,135,606	1,855,911	5,521,847	19,911,788	7,961,169	90,165,824
	1949	49,697,987	41,450,396	1,850,918	2,326,184	15,300,998	5,805,510	88,209,470
Duluth, South Shore & Atlantic	1950	7,093,373	5 533,509	61,798	688,142	3,643,836	1,124,027	7,570,361
	1949	5,693,628	5,721,681	22,013	542,186d	2,955,195	991,529	6,761,272
Elgin, Joliet & Eastern	1950	48,909,654	27,414,274	574,703	7,334,843	21,328,950	22,256,777	17,388,000
	1949	41,821,213	27,332,662	654,747	5,558,083	16,418,672	14,554,919	18,084,000
Indianapolis Union	1950	720,436	3,448,693	204,487	356,523	1,778,814	1,003,266	6,240,962
	1949	634,831	3,254,867	202,351	353,905	1,569,925	961,108	5,979,000
Kansas City Southern	1950	39,354,451	22,767,857	2,390,959	6,148,380	18,057,782	11,552,865	64,454,951
	1949	39,746,238	22,240,479	2,440,673	7,228,967	20,037,860	14,501,988	63,927,620
Lehigh & Hudson River	1950	3,012,030	2,001,594	5,887	330,832	1,223,290	600,136	881,973
	1949	2,741,262	2,107,343	114	157,837	1,735,923	402,883	.....
Louisiana & Arkansas	1950	21,450,683	12,741,549	664,983	3,114,933	14,510,841	7,568,019	18,214,653
	1949	18,757,009	11,554,346	764,549	2,841,068	11,175,176	5,742,407	20,147,084
Maine Central	1950	23,983,122	18,583,649	1,230,760	1,266,759	7,442,047	5,221,846	26,943,410
	1949	24,157,738	18,938,165	1,285,446	1,037,239	6,979,237	4,476,881	26,778,777
Minneapolis & St. Louis	1950	20,881,599	15,008 925	171,267	2,765,248	6,632,737	5,506,119	6,041,081
	1949	18,865,047	15,394,287	169,895	1,305,788	4,691,040	4,026,148	6,527,001
New York, Chicago & St. Louis	1950	146,923,938	94,255 255	4,865,522	21.019,542	53,974,582	40,828,260	119,548,790
	1949	127,365,167	90,168 907	4,497,324	15,642,382	39,017,477	28,336,284	120,071,145
Norfolk & Western	1950	167,996,439	116,410,282	1,828,170	29,308,479	82,988,066	41,133,985	43,895,131
	1949	148,946,972	114,043,855	1,939,897	20,931,286	68,166,728	27,384,103	44,389,731
St. Louis-San Francisco	1950	121,383,409	88,652,074	3,611,593	13.696,262	55,783.967	32,443,447	145,528,704
	1949	113,117,337	90,557,517	3,618,335	8,057,408	50,925,507	26,205,403	143,119,723
St. Louis Southwestern	1950	62,525,910	36,344,920	1,499,930	9,960,431	29,567,225	16,771,326	35,851,039
	1949	60,175,357	38,252 031	1,838,992	8,369,528	32,743,268	13,792,469	47,676,368
Virginian	1950	33,213,158	20,039,914	2,179,740	6,708,338	15,789,316	9,673,958	72,133,667
	1949	29,208,704	19,962,387	2,168,346	3,501,617	14,216,944	8,802,409	73,698,696

*On December 31
d—Deficit

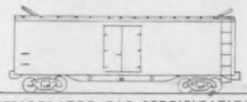
Covered hopper car finished with CARCLAD in September 1946. This photo made 3 years later ... inspections made 4 years later... still show finish intact and good for continued service!





TANK CAR SPECIFICATIONS

COVERED HOPPER CAR SPECIFICATIONS



REFRIGERATOR CAR SPECIFICATIONS

NOW...

protection against acids... alkalies... corrosive cargoes...

for YEARS instead of MONTHS!

Now proved in continuous service for periods of more than FOUR years on covered hopper cars, Sherwin-Williams CARCLAD offers an end to costly refinishing schedules formerly required.

Equipment once requiring refinishing within months now can be protected for years—even in cement, soda ash and similar service. CARCLAD—a product of Sherwin-Williams research—provides new long-life resistance to acids, alkalies, sulphur, phosphate, common salt, petroleum products and alcohols. It withstands repeated scrubbing and washing with strong cleaning solutions.

Ask for proof of the remarkable performance of this new finish. See actual photographs and records of CARCLAD-covered hopper cars in service on leading railroads! Contact your Sherwin-Williams representative or write The Sherwin-Williams Co., Transportation Division, Cleveland 1, Ohio.

SHERWIN-WILLIAMS
RAILWAY FINISHES

Northeastern Law School. He was admitted to the bar of Massachusetts in 1905, Connecticut in 1909 and Maine in 1916. Mr. Hart was associated with Choate, Hall & Stewart of Boston from 1905 to 1909. In the latter year he entered railroad service with the New Haven as assistant attorney and solicitor at New Haven. In 1916 he joined the B.&A. and affiliated companies as general counsel, clerk of the corporation and secretary of the executive committee. In 1949 Mr. Hart was named vice-president and general counsel. In November 1950 he relinquished the duties of general counsel and clerk of the corporation, but continued as vice-president until April 17.

As reported in the *Railway Age* of March 26, **Henry W. Craig** has been appointed assistant to vice-president in charge of traffic of the CANADIAN NATIONAL SYSTEM at Montreal, Que. Mr. Craig was born at Montreal in 1907 and joined the C.N. there in 1924. After serving as clerk in the office of the auditor of freight accounts, and stenographer in various offices of the

Henry W. Craig

freight department, he was appointed secretary in the general freight traffic manager's office in 1937. In 1938 he became secretary to the vice-president of traffic, and in 1945 he was appointed general clerk in the foreign freight agent's office. Later the same year he was named grain clerk in the foreign freight department and on November 1, 1946, became assistant foreign freight agent. On May 17, 1948, Mr. Craig was appointed assistant to general freight traffic manager at Montreal, which position he held until his recent appointment.

Appointment of **David C. Bevan** as vice-president in charge of finance of the PENNSYLVANIA was announced on April 26 by Walter S. Franklin, president. Mr. Bevan, who has been treasurer of the New York Life Insurance Company, assumes his new post with the railroad on May 16. **George H. Pabst, Jr.,** who has been vice-president in charge of finance for the past 11 years, becomes vice-president —assistant to president. Mr. Pabst, who is 63, has not been in good health.

O. H. Zimmerman, superintendent of the ILLINOIS CENTRAL at Waterloo, Iowa, has been promoted to assistant to vice-president—operation at Chicago. Born on April 10, 1914, at Champaign, Ill., Mr. Zimmerman attended the University of Illinois for three years. He entered I.C. service in February 1936 as a switchman, and subsequently advanced through va-

O. H. Zimmerman

rious positions in the operating department until 1943, when he became trainmaster at Mattoon, Ill. Later he served in the same capacity at Champaign, Palestine, Ill., Fort Dodge, Iowa, and Louisville, Ky. In August 1949 he was promoted to superintendent at Clinton, Ill., being transferred to Waterloo in the same capacity in November 1950.

FINANCIAL, LEGAL & ACCOUNTING

Wirt P. Marks, Jr., assistant general counsel of the RICHMOND, FREDERICKSBURG & POTOMAC, has been elected general counsel, with headquarters as before at Richmond, succeeding **E. Randolph Williams,** who will retire on May 1 at his own request, after nearly 31 years of service, but will be retained as advisory counsel.

OPERATING

The ILLINOIS CENTRAL has announced the following changes in its operating department: **R. L. Tooker,** superintendent at Champaign, Ill., promoted to superintendent transportation at Chicago; **S. C. Jones,** superintendent at East St. Louis, Ill., transferred to succeed Mr. Tooker; **R. O. Bodell,** assistant superintendent freight service on the Chicago Terminal division, advanced to succeed Mr. Jones; **E. H. Buelow,** superintendent at Clinton, Ill., transferred to Waterloo, Iowa, succeeding **O. H. Zimmerman,** who has been appointed assistant to vice-president—operation at Chicago, as reported elsewhere in this issue; **D. F. Quiett,** trainmaster, Chicago terminal, appointed as Mr. Bodell's successor; **J. W. Dodge,** trainmaster at Louisville, Ky., promoted to superintendent, succeeding Mr. Buelow; **H. F. Wilson,** made assistant superintendent passenger service at Chicago; **J. K. Scott,** appointed to replace Mr. Quiett; **M. A. Sheahan,** trainmaster at Carbondale, Ill., transferred to McComb, Miss., succeeding **H. L. Williams,** who moves to Louisville, replacing Mr. Dodge; **W. A. Johnston, Jr.,** made successor to Mr. Sheahan; **A. R. Shaw,** trainmaster at Chicago, moved to Memphis, to succeed **H. W. Wortham,** who has in turn been transferred to Princeton, Ky.; and **C. E. Bartholomew,** appointed trainmaster at Paducah, Ky.

As reported in *Railway Age* of March 12, **D. W. Benton** has been appointed assistant to chairman—refrigerator cars of the Car Service Division of the ASSOCIATION OF AMERICAN RAILROADS at Chicago. Mr. Benton was born on October 14, 1898, at Camden, Tenn., and attended Morris Harvey College, Barboursville, W. Va. He entered the service of the Louisville & Nashville as a clerk at Paris, Tenn.,

D. W. Benton

in August 1920, later becoming a foreman in the car department. After service with the Fruit Growers Express Company, Indiana Harbor, Ind., Mr. Benton returned to the L.&N. as a car foreman. On June 1, 1941, he joined the A.A.R. as car service agent, being promoted to chief clerk of the Refrigerator Car Section in April 1943, which position he held until his recent appointment.

W. Thomas Rice, superintendent of the RICHMOND, FREDERICKSBURG & POTOMAC, has been elected general superintendent, with headquarters as before at Richmond, succeeding **William A. Aiken, Jr.,** who will retire on May 1, at his own request, after more than 50 years of service. The position of superintendent will be abolished.

(Continued on page 60)

Seven basic design and construction advantages of National C-1 Trucks help you deliver merchandise on time and in good order—for greater good will from your shippers and receivers.

For a smoother, safer ride . . . depend on NATIONAL Lading-Conscious C-1 Trucks—they protect your equipment, your roadbed and the interests of your customers.

NATIONAL

1. **Quick Easy Visual Inspection**—Gives immediate assurance that friction control mechanism is functioning properly, without time delays or cost of handling or removing a single part.
2. **Friction Mechanism In Side Frame**—Simplifies control of lateral and vertical truck motion.
3. **Large Wedge Bearing Surfaces**—Wear is minimized because bolster is protected by hardened-steel wear plates.
4. **Low-Stressed Wedge Springs**—Low-rate wedge springs are cold-wound and shot-peened for extra fatigue resistance.
5. **Full Box-Section Bolster**—Bolster has maximum strength and rigidity because it is a full box-section from end to end . . . is not recessed or notched for friction control mechanism.
6. **Spring Deflections**—Springs of 2½, 3 1/16, 3 11/16 or 4-inch deflection can be used.
7. **Wedge Aligning Lugs**—Four wedge aligning lugs integrally cast in the top of each journal box protect journal bearing lugs against peening and breaking.

Write for National C-1 Truck Circular No. 5150. The National Malleable and Steel Castings Co., Cleveland 6, Ohio.

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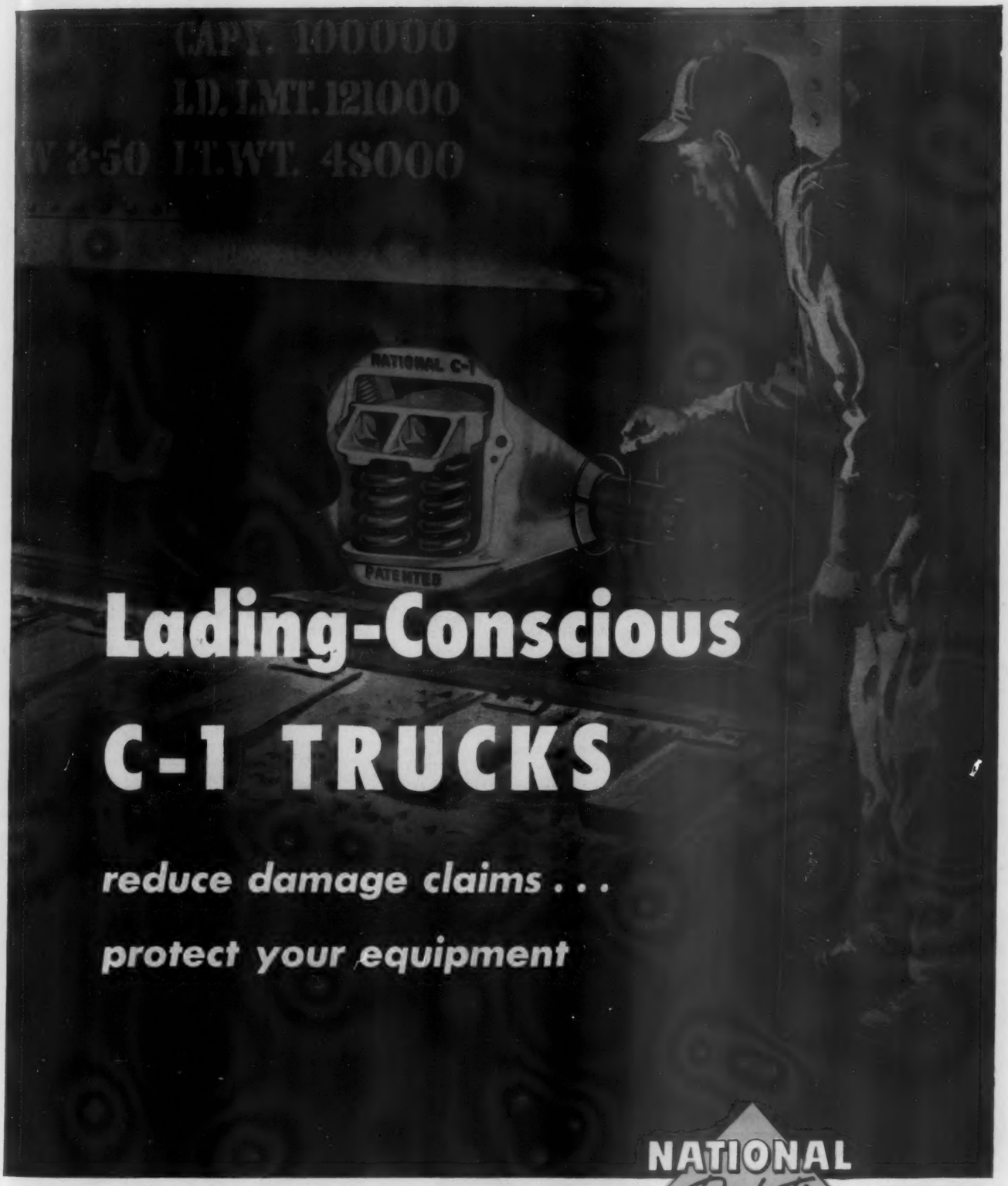
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AND INDUSTRY
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CASTINGS COMPANY
JOURNAL BOXES AND LIDS

(Continued from page 57)

Mr. Rice was born at Hague, Va., on June 13, 1912, and was graduated from Virginia Polytechnic Institute (B.S. in C.E. 1934). He entered railroad service on August 1, 1934, as assistant on engineer corps of the Pennsylvania at Elmira, N. Y., subsequently holding that position at Wilmington, Del., and in the office of the chief engineer at Philadelphia. He then became assistant supervisor and on April 1, 1940, was appointed supervisor of track, which position he held successively at Clayton, Del., Wheeling, W. Va., and Logansport, Ind. On April 9, 1942, he became a first lieutenant in the Army of the United States, 730th Railway Operating Battalion, subsequently serving as company commander, battalion executive officer and battalion commander with the 791st

W. Thomas Rice

and 711th Railway Operating Battalion in Iran. On March 1, 1945, Mr. Rice was promoted to lieutenant colonel and from June to December 1945 was Rail Officer, Sixth Army Headquarters, in the Philippine Islands and Japan and was awarded the Legion of Merit with Oak Leaf Cluster. On February 1, 1946, Mr. Rice became supervisor of track of the R.F.&P. at Fredericksburg, Va., and seven months later was appointed superintendent at Potomac yard, Alexandria, transferring to Richmond in July 1949.

Mr. Aiken was born at Norfolk, Va., on May 8, 1882, and entered railroad service on October 1, 1900, as clerk to the traffic manager of the R.F.&P. He transferred to the operating department in February 1903, where he served as assistant to superintendent of transportation, superintendent of transportation and general superintendent. Mr. Aiken was president of the American Association of Railroad Superintendents in 1937.

W. O. Solberg, trainmaster on the MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE at Enderlin, N. D., has been transferred to Stevens Point, Wis. He is succeeded by **J. A. Wilton,** trainmaster at Thief River Falls, Minn., who is in turn succeeded by **T. A. Nolan.**

TRAFFIC

As announced in the *Railway Age* of March 26, **Charles L. McCoy** has been appointed traffic manager of the Atlantic region of the CANADIAN NATIONAL at Moncton, N. B. Mr. McCoy was born at Moncton and entered the service of the C.N. in 1914, joining the

Charles L. McCoy

freight department at Montreal in 1920. In 1940 he was appointed chief clerk and in August 1948 was promoted to general freight agent—rates, tariffs and division of the system at Montreal, in which capacity he served until his recent appointment.

Elmer L. Dietz has been promoted to general agent of the NORFOLK SOUTHERN at Philadelphia, succeeding **Leo S. Johnson,** whose promotion to executive general agent at Chicago was reported in *Railway Age* February 26.

Rudolph O. Lawhon, district freight agent of the SOUTHERN at Laurel, Miss., has been appointed general agricultural agent at Atlanta, succeeding **Gerald W. Humphrey,** who will retire on May 1, after more than 38 years of service. **Conley S. Boothe,** commercial agent at Lake City, Fla., succeeds Mr. Lawhon as district freight agent at Laurel.

Bruce F. Mahon, Jr., former general agent for the ST. LOUIS-SAN FRANCISCO at Omaha, has been transferred in that capacity to Kansas City, Mo., succeeding **G. L. Morgan,** who has been appointed traffic manager at Pensacola, Fla. *(Railway Age,* April 23). **Paul G. Miller,** chief clerk in the general traffic manager's office at St. Louis, has been promoted to general agent at Milwaukee, to succeed **A. D. Masters,** who has become general agent at Cleveland *(Railway Age,* March 26).

As reported in *Railway Age* April 9, William F. Vail has been promoted to traffic manager of the New York, Ontario & Western at New York. Mr. Vail was formerly freight traffic manager in charge of sales and service

MECHANICAL

As reported in *Railway Age* April 2, **Kenneth Cartwright** has been appointed general mechanical superintendent of the NEW YORK, NEW HAVEN & HARTFORD at New Haven, Conn. Mr. Cartwright was born at West Epping, N. H., on March 14, 1890, and attended Massachusetts Institute of Technology (B.S. 1912). Mr. Cartwright entered railroad service on June 1, 1914, as material inspector with the New Haven at New Haven. After service in the United States Navy as lieutenant, j.g., he returned to the New Haven and

Kenneth Cartwright

served successively as assistant to engineer of tests, chief shop inspector, general mechanical inspector, assistant mechanical engineer and mechanical engineer. From September to November 1942 Mr. Cartwright was on leave of absence to study motive power and and rolling stock requirements for the Vitoria a Minas Railway in Brazil. He was appointed chief mechanical engineer of the New Haven on April 1, 1944, which position he held until his recent promotion.

The CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC has announced the following changes in its motive power department: **F. A. Upton,** division master mechanic at Miles City, Mont.,

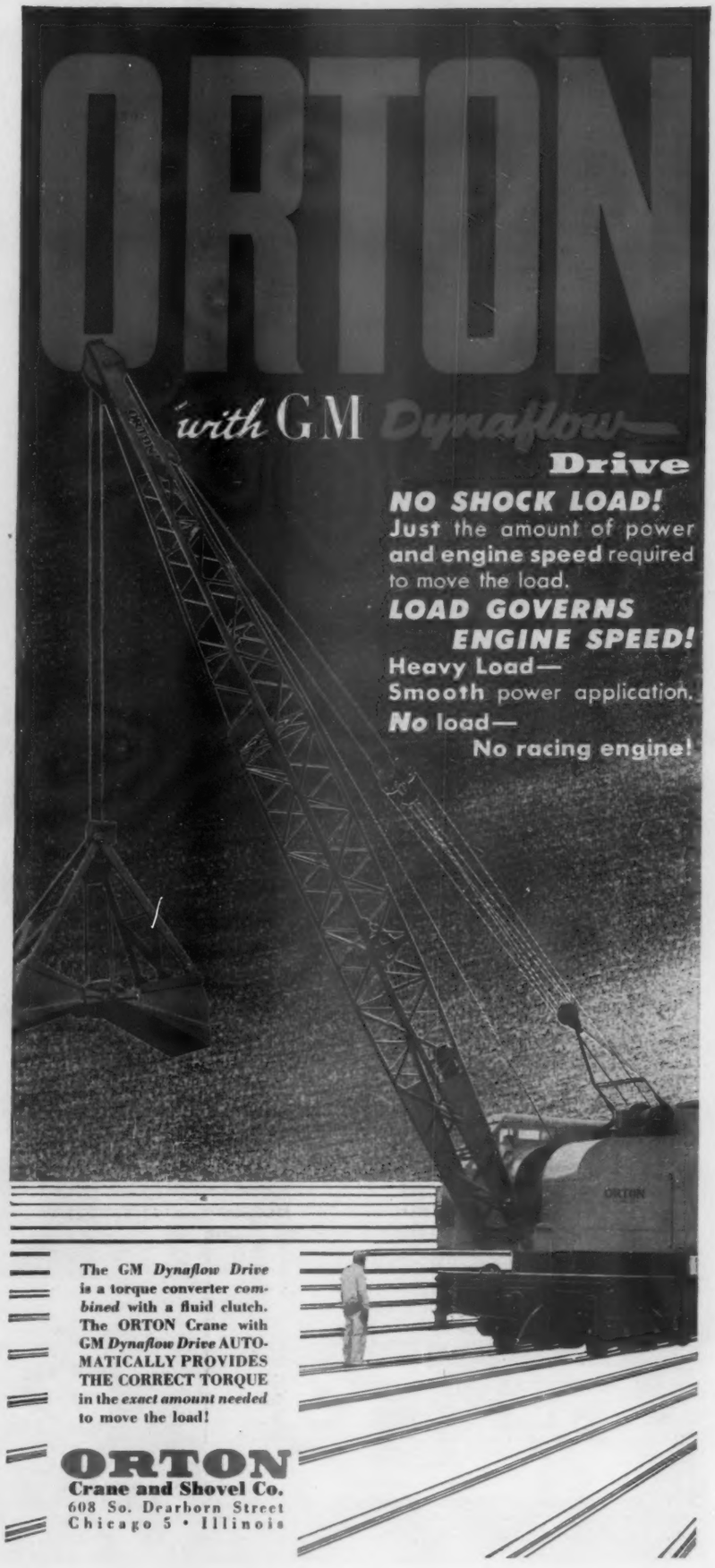
transferred to Chicago as master mechanic: **L. H. Rabun,** district master mechanic at Chicago, transferred as master mechanic to Miles City; **E. L. Grote,** division master mechanic at Mason City, Iowa, moved to Minneapolis, Minn. (his former post being abolished); the territory of **W. W. Henderson,** division master mechanic at Savanna, Ill., extended to include Sioux City, Iowa, and Calmar; jurisdiction of **W. W. Bates,** division master mechanic at Milwaukee, Wis., extended to include that part of the La-Crosse and River division from Milwaukee to LaCrosse and from New Lisbon, Wis., to Woodruff; **F. L. King,** division master mechanic at Milwaukee, given jurisdiction over all steam locomotive maintenance at that point as well as the foundry; **A. M. Hagen,** also division master mechanic at Milwaukee, assigned jurisdiction over all diesel locomotive maintenance there; **J. L. Brossard,** appointed assistant master mechanic at Minneapolis, and **C. G. Benkendorf,** assigned to a similar post at Milwaukee; and **H. C. Pottsmith,** assistant division master mechanic at La Crosse, Wis., made general diesel supervisor there.

The CHICAGO & NORTH WESTERN SYSTEM has announced the following changes in its mechanical department at Chicago: **W. W. Matzke,** assistant to chief mechanical officer, advanced to chief mechanical engineer, succeeding **N. T. Olsen,** who is leaving railroad service; **W. P. Miller,** superintendent diesel and motor car equipment, promoted to succeed Mr. Matzke; **E. H. Weston,** mechanical engineer, advanced to assistant chief mechanical engineer; **O. Borgeson,** also mechanical engineer, appointed engineer car maintenance; and **W. K. Farmer,** made mechanical engineer.

SPECIAL

V. C. White has been appointed safety supervisor on the ST. LOUIS-SAN FRANCISCO at Memphis.

Fred V. Stone, assistant manager of the department of research of the CANADIAN PACIFIC at Montreal, has been appointed manager of that department, effective May 1, and will be succeeded as assistant manager by **Robert C. Barnstead,** principal research assistant. Mr. Stone was graduated from McGill University with an M.A. degree in 1933, and joined the C.P. in 1938 as special representative in the office of the vice-president at Montreal. In July 1941 he became office coordinator for the aircraft production branch of the department of munitions and supply at Ottawa, returning to Montreal in 1942 as manager of its personnel department of C.P. Airlines. Two years later he became a representative in the personnel department of the C.P. and when the road's research department was founded in 1945 he joined it as a research assistant, being appointed assistant manager last May.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The GM Dynaflow Drive is a torque converter combined with a fluid clutch. The ORTON Crane with GM Dynaflow Drive AUTOMATICALLY PROVIDES THE CORRECT TORQUE in the exact amount needed to move the load!
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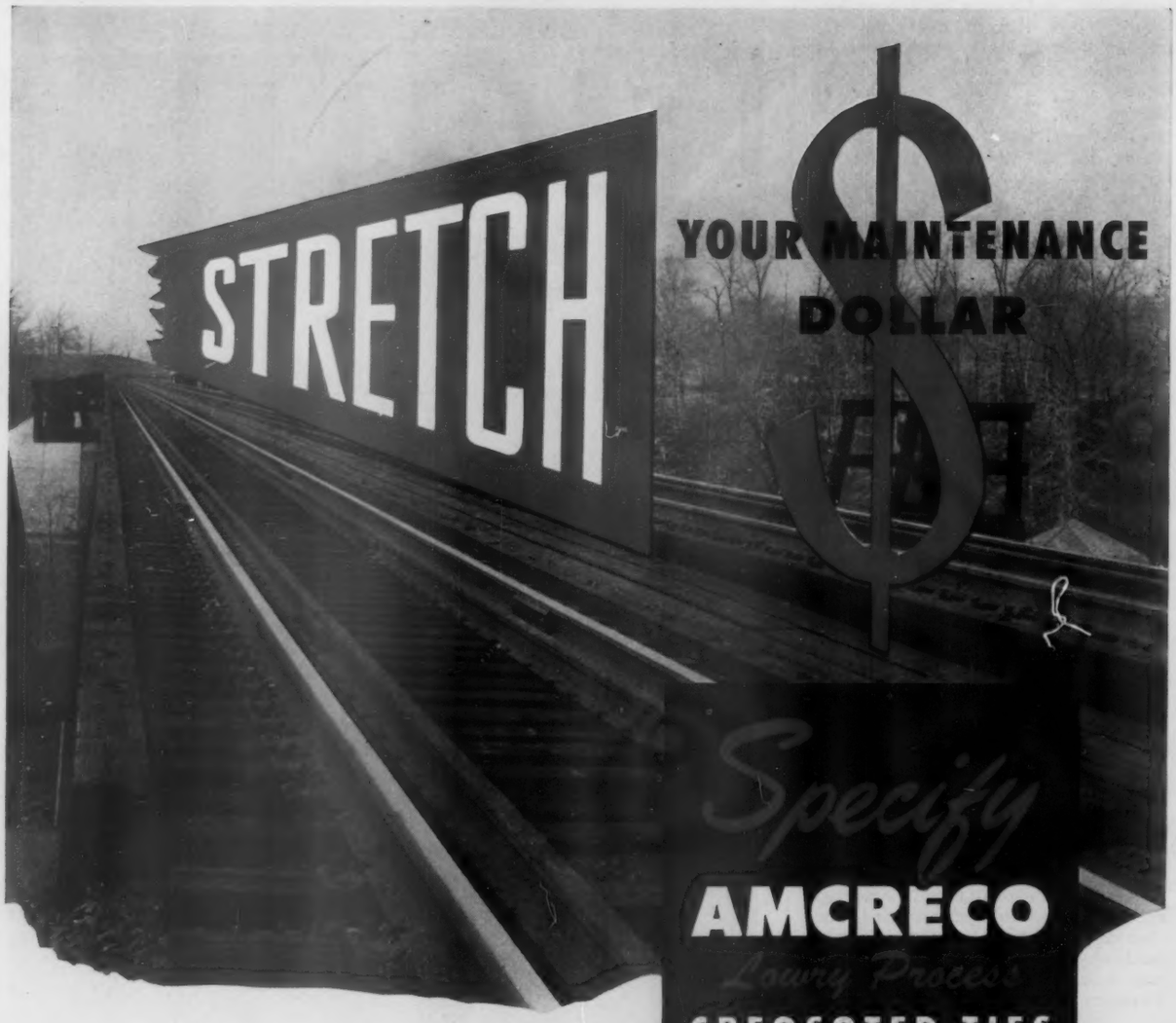

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GE

LITERATURE and PAMPHLETS Offered by Railway Age Advertisers

Following is a compilation of literature and pamphlets offered *free of charge* by advertisers in the April issues of RAILWAY AGE. *Circle the number* or numbers on the card below, to receive the additional literature you desire.

200. Diesel-Electric Locomotives
General Electric Company—Bulletin GEA-4657A gives information on the General Electric 70-ton and 44-ton diesel-electric locomotives.

201. Voice Frequency Repeater
Automatic Electric Corporation—Circular 1692-A describes Type 47 voice frequency repeater for pepping up voice circuits for proper transmission volume on long lines.

202. Locomotive Crane
Industrial Brownhoist Corporation—Descriptive information regarding Brownhoist diesel electric locomotive cranes.

203. Weed Control
Allied Chemical & Dye Corp. (General Chemical Division)—Descriptive portfolio "A Policy Decision on Railroad Weed Control", outlines General Chemical's method of maintaining weed-free ballast.

204. Chilled Car Wheels
Association of Manufacturers of Chilled Car Wheels—Descriptive booklet "Gentlemen of the Jury" provides information regarding the advantages of AMCCW chilled car wheels.

205. Creosoted Grade Crossings
Koppers Company Inc.—New folder on Koppers grade crossings contains construction details, descriptive data and reasons why Koppers grade crossings save money.

206. Water Conditioning
Dearborn Chemical Company—Booklet "Dearborn Di-Ionizing Systems" contains valuable information about how to secure mineral-free water for Diesel service and other railway applications.

207. Welded Rail; Welding
Oxweld Railroad Service Company—Additional information on spot welding with a Heliarc torch; and on long welded rail.

208. Locomotive Cranes
American Hoist & Derrick Company—Literature on American Hoist and Derrick Company's diesel electric cranes.

209. Journal Bearings
Magnus Metal Corporation—Booklet "Facts" gives information regarding the A.A.R. solid journal bearings.

210. Pipe Insulation
Johns-Manville—Folder IN-132A describes thermo-wrapped insulation for straight and curved pipe.

211. Pins and Bushings
Ex-Cell-O Corporation—Bulletin 32381 describes standard styles and sizes of pins and bushings for steam, diesel and passenger car equipment.

212. Car Heating
Minneapolis-Honeywell — 16-page booklet announces new Honeywell economy car heating system.

213. Lift Truck Maintenance
Towmotor Corporation. Detailed information on Towmotor maintenance service for Towmotor fork lift trucks.

214. Car Insulation
J. W. Mortell Company. Descriptive circular tells about railway Insulmat, a 3-purpose coating for freight, passenger and refrigerator cars and cabooses.

215. Passenger Car Heating
Vapor Heating Corporation. A new booklet from the film "Vapor Plus Factors for Passenger Car Heating" shows how vapor unit radiation uses steam and condensate together in the simplest form to give true temperature comfort.

216. Coded Remote Control
General Railway Signal Company. New pamphlet #716 describes new proved system for coded remote control of a single location.

217. Steel
Bethlehem Steel Co. Catalog 259 describes Bethlehem's Mayari R low-alloy, high strength steel.

218. Slack Adjuster
Westinghouse Air Brake Co. Descriptive leaflet 2469 describes automatic slack adjuster for freight cars.

219. Freight Car Insulation
American Hair & Felt Co. Data available on Streamlite Hairinsul freight car insulation.

220. Rust Preventative
Rust-Oleum Corporation. New catalog describes rust preventative for rolling stock, buildings, bridges, etc.

(Continued first column on reverse side)

Additional Product Information

This a complete list of the products mentioned in the advertising pages of this issue. For more data on any product listed, circle the page number on the business reply post cards below, fill out and mail. If the advertiser mentions more than one product write in the name of the product.

A

Air Brake Equipment 4

B

Ballast Cleaning Machine 54
Batteries, Storage 14
Bolts, Hook 64
Books, Railroad 71
Boring Machines, Diesel Wheel 16
Brake Beams 15
Brake Equipment, Air 4

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Circuit Breaker, Shockproof 10
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Draft Gears 3

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Educational Services 70

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☐ Literature Only ☐ Send Representative ☐ Price Data

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58 61 62 63 64 65 67 68 69 70 71 72 73 74
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On page ....., I want data on ..... only.
(product)

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Company .....

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LITERATURE AND PAMPHLETS (continued)

221. Wiring
Okonite Co. Two new bulletins are available, RA-2078 on diesel-electric wiring and RA-1036C on car wiring.

222. Diesel Engine Rebuilding
Electro-Motive Div. General Motors. Data available on Electro-Motive's unit exchange service—diesel engine factory-rebuilding service.

223. Diesel Filters
Bowser, Inc. Literature available on Micro-Filters by Bowser—fuel filters designed to prevent clogged diesel injectors.

224. Car Switcher
Frank G. Hough Co. Job Study No. 18 gives the complete story of the Payloader—flexible switcher with rubber tired wheels.

225. Dictating Machine
Thomas A. Edison, Inc. New Descriptive booklet, "Line on Televoice" describes Televoicewriter—dictating instrument.

226. Brake Equipment
Westinghouse Air Brake Company. Descriptive Catalog No. 2060 tells about Westinghouse D-24-B feed valve recommended for use with 24-RL and 6SL locomotive brake equipment.

227. Unicel Freight Car
Pressed Steel Car Company, Inc. Booklet "Unicel—The Freight Car of the Future—Today" gives the complete story of the Unicel combination box and refrigerator car.

228. Aluminum Tank Cars
Aluminum Company of America. Full information available on aluminum tank cars, used to transport chemicals and acids.

229. Fork Truck
Baker Industrial Truck Div. of the Baker-Raulang Company. Bulletin 1327 describes the Baker 2000 Pound Capacity Fork Truck, the new type FS material handling truck.

230. Brake Equipment
The New York Air Brake Company. Instruction Pamphlet No. 64 completely describes new F-6 Feed Valve, which insures the most uniform and accurate control of brake pipe pressure.

231. Freight Car Truck
National Malleable and Steel Castings Company. National C-1 Truck Circular No. 5150 describes the "Lading-Conscious" Truck, the National C-1.

232. Reefer Car Heater
Luminator, Inc. Complete information available, including diagrams, on the Luminator-Mitchell underslung refrigerator car heater.

233. Speed Recorder
Barco Manufacturing Company. New fact-filled catalog describes Barco speed recorders.

234. Door Operators
National Pneumatic Company, Inc., National Pneumatic's publication No. 1063 gives complete information on automatic end door operators for passenger cars.

235. Ballast Cleaner
The Matisa Equipment Corporation. Details on availability of 1951 cleaner, the ballast cleaner that reaches under the ties.

236. Freight Car Bulkheads
Pittsburgh Steel Products Company. Information on Pittsburgh permanent returnable steel bulkheads.

237. Freight Car Compartmentizer
Pullman-Standard Car Manufacturing Company. Complete data on the "Compartmentizer"—a new unit for freight cars, useful in protecting lading which needs securing, including mixed LCL shipments.

238. Crosstie Dowells
Graham Tie Dowell Service. Bulletin DM-1 describes tie dowelling machine for applying dowels into one or both ends of ties.

239. Rolling Doors
The Kinnear Mfg. Co. Complete data on rolling doors now available in the new free Kinnear Rolling Door Catalog.

240. Eye Protector
Willson Products Inc. Descriptive bulletin describes the Willson Monogoggle plastic face and eye protector.

241. Railroad Finishes
McDougall-Butler Co., Inc. Literature and a color card describes the company's specialized railroad finishes.

242. Clamps
Punch-Lok Company. Full information available on Punch-Lok clamps for shops and on rolling stock.

243. Car Insulation
Dednox Incorporated. Detailed information on Dednox freight car insulation.

244. Vanadium Steels
Vanadium Corporation of America. Data sheet gives complete details of composition etc., of Vanadium Steels and Irons for diesel application.

245. Air Brake Equipment
Westinghouse Air Brake Co. Offers new catalog No. 2053 describing fully the Westinghouse Locomotive Air Brake Equipment 24-RL.

246. Circuit Breaker
Westinghouse Electric Co. The shockproof circuit breaker #P-1 described in Westinghouse pamphlet B4081.

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W

Washing Materials, Car 64
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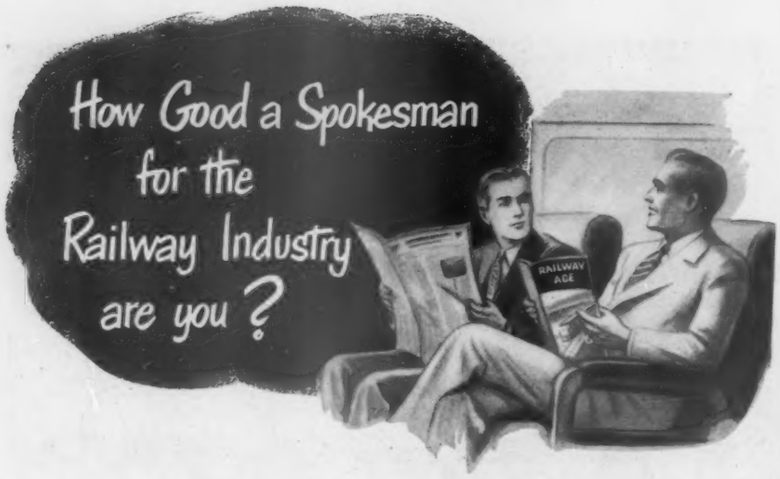

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Current Publications

PERIODICAL ARTICLES

Freight Trains. Fortune, March 1951, pp. 91-98. Published by Time, Inc., 540 North Michigan ave., Chicago 11. Single copies, $1.25

Lemuel B. Line has painted a complete freight train for Fortune, hauled by a diesel locomotive, and showing representative types of cars used in such a train, with a brief commentary on each. For reasons of space, Fortune's train has only 29 cars and two diesel units. But otherwise it is both statistically and mechanically correct. The types of cars are proportioned to the actual number in use, and they are drawn with relentless precision.

The Rise of the Rubber Railroad. Fortune, April 1951, pp. 120-132. Published by Time, Inc., 450 North Michigan ave., Chicago 11. Single copies, $1.25.

Despite the setback recently dealt Riverlake Belt Conveyor Lines by the state senators of Ohio, the use of belt conveyors to transport products of mines, pits and quarries is expanding, and other "common carrier" belt proposals may burst at any time from the confines of mere private, "intramural" transport. In addition to describing the Riverlake proposal and some of the larger private belt installations—some of which have been in use for years—Fortune takes out a sharp pencil to compare belt, rail and truck operating costs and comes up with some totals which may be quite discouraging to railroad and trucking officers alike.

Coast-to-Coast Rail Deal Still Simmers. Business Week, March 31, 1951, pp. 88-93. Published by McGraw-Hill Publishing Company, 330 W. 42 st., New York 18. Single copies, 25 cents.

To some people it looks as though Robert R. Young is on the point of pulling such a deal together. But there are a lot of obstacles.

Ore Haul Revives Seaway. Business Week, February 17, 1951, pp. 98-101. Published by McGraw-Hill Publishing Company, 330 W. 42nd st., New York 18, N. Y. Single copies 25 cents.

The St. Lawrence project is up in Congress again. This time its backers, with parts of the steel industry on their side, think they have a good chance. Labrador iron mines have made the difference.

The Monon's Barriger, by Nancy Ford. Railway Progress Magazine, March 1951. Published by the Federation for Railway Progress, 1430 K st., N.W., Washington 5, D.C.

Chicago's star railroad reporter has done an interpretative piece on the Chicago, Indianapolis & Louisville and its dynamic president—which should provide the complete answer to railroading's critics who assert that the industry has less than a fair share of alertness and imaginative vigor in its customer relations. Miss Ford records that a few years ago the Monon "was the butt of jokes among Hoosiers who once had been proud of it, and it

was broke besides." Now "the 540-mile railroad has money in the bank, good traffic volume, improved physical properties — and an unbelieveable prestige among the Indiana communities it serves." The writer tells how this result has been accomplished —not by having gone as far as the president would like to go, if resources were available, to make the Monon a "super-railroad"—but by providing a substantial, well-equipped property, giving reliably prompt service at all times; and by being steadily and honestly friendly and cooperative with everybody—shippers, connections, employees, and the political community.

PAMPHLETS

Everyman's Almanac, 1951. 33 pages. Published by the Michigan Railroads Association, Prudden bldg., Lansing, Mich. Free.

An interesting little booklet containing information about railroads, interspersed with monthly calendars, weather wisdom, recipes, and other useful information.

Opportunities Unlimited. 74 pages, illustrations, maps, charts. Prepared by J. Walter Myers, Jr., forestry agent, Illinois Central, and published by that road's Agricultural Department, Chicago, from which copies are available on request.

After briefly outlining the history of southern forests and their development, Mr. Myers presents a detailed outline of the present status of these timber-growing areas and a summary of current trends in the South's forest products industry. In somewhat greater detail he describes the various activities by national and regional groups, as well as by individual industrial concerns, which are converting timber from a mere "natural" resource to a carefully planned and perpetual crop. A final chapter relates forestry and the South's wood products industry to the railroads. The book has been distributed to bankers, educators and wood-using industries, and to leaders in agriculture and forestry, throughout the South.

BOOKS

Transportation in the United States, by T. W. Van Metre. Second edition, 401 pages. Published by Foundation Press, Inc., 268 Flatbush ave. Ext., Brooklyn, N. Y. $4.

Changes in the past 10 years in the art of transportation and in transportation policies of our government impelled Mr. Van Metre to prepare a revised edition of his textbook, which is designed for use in general transportation courses such as are offered in many colleges as a part of their work in economics and in business. The chapters dealing with the early history of American transportation have been changed but little; the chapters dealing with more recent history, with technology, and with legislation have been largely rewritten. The discussion of rate theory, especially the part dealing with the problem of discrimination, has been subjected to some clarifying revision. The book is

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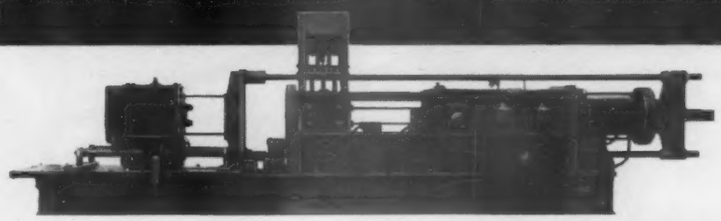

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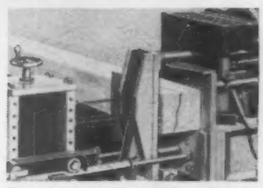

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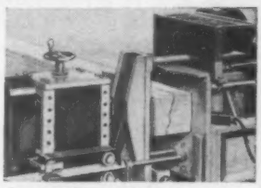

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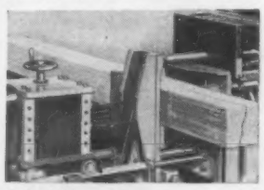

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divided into four parts—the history of American transportation; the business of transportation (organization; transportation of freight, passengers, mail and express; finance; accounting; statistics); shippers and carriers (including practical aspects of rate making and rate making by theory); and regulation of the transportation business.

American Locomotives; A Pictorial Record of Steam Power, 1900-1950, by Edwin P. Alexander. 256 pages, illustrations, drawings. Published by W. W. Norton & Co., 101 Fifth ave., New York 3, $6.75.

This book is a continuation of the author's previous book, "Iron Horses." It is essentially a pictorial history of motive power developments since 1900. It contains over 100 full-page plates, together with diagrams and brief descriptive data of representative locomotives of the period. The locomotives illustrated have been been chosen for being either milestones in design, particularly representative of their railroad, or pictorially outstanding.

The Army Almanac. A compendium of facts relating to the United States Army. 1,009 pages. Prepared by the Armed Forces Information School, Carlisle Barracks, Pa., and available from the U. S. Government Printing Office, Washington, D. C. $3.

Included in the volume is a 10-page section on the Transportation Corps, giving a history of the corps, and its present organization. There is also a review of the T.C.'s achievements during World War II.

TRADE PUBLICATIONS

Nordberg Machinery for Many Applications. Bulletin 187. 28 pages, illustrations. Published by the Nordberg Manufacturing Company, Milwaukee 7, Wis.

In this booklet are described, with illustrations and specifications, all the various types of equipment manufactured by Nordberg—diesel engines, gasoline marine engines, Symons cone crushers and screens, mine hoists, machinery for processing ores and minerals, air and gas compressors, and railway track-maintenance machines.

Caterpillar Products. 40 pages, illustrations. Published by Caterpillar Tractor Company, Peoria, Ill.

Presents a complete list, with pictures and brief specifications, of all except two units of the current line of Caterpillar products—81 in all. Included are nine of the 11 new models announced during the past year. Caterpillar issues this booklet annually.

Welded Pressure Vessels. 16 pages. Published by the American Car & Foundry Co., 30 Church st., New York 8.

The storage tank shown in section in this booklet is the A.C.F. standard for transport or storage of liquid propane up to the Underwriters' Laboratories limit of 30,000 gal. Standard foundation plans are also shown, as well as processes and equipment used in construction of these welded pressure vessels.

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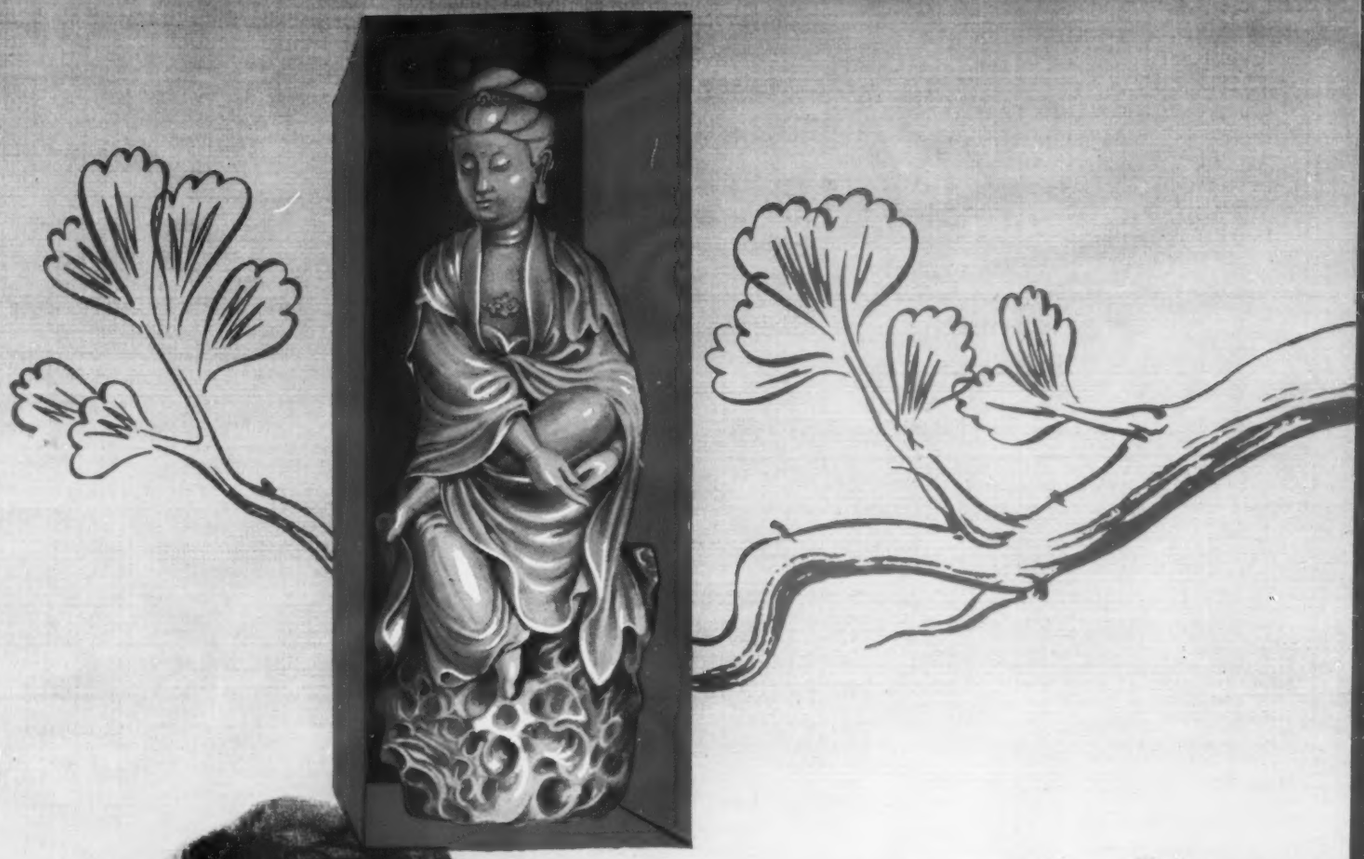

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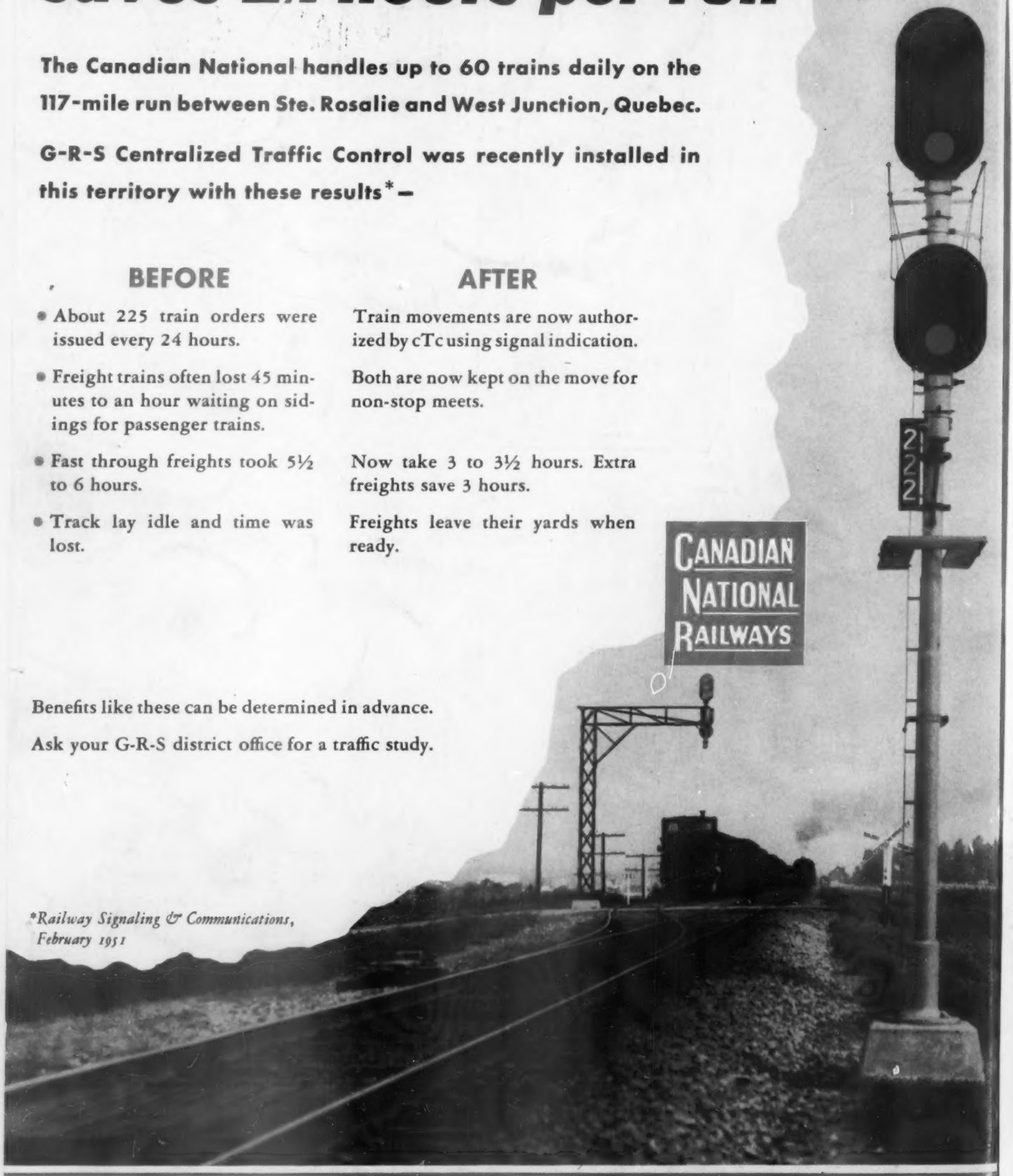

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